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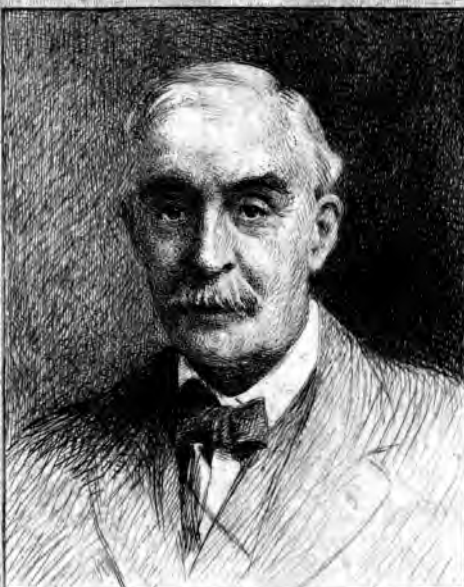
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A STUDENT'S MANUAL OF PSYCHOLOGY

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KIRCHNER





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PSYCHOLOGY

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A STUDENT'S MANUA
OF
PSYCHOLOGY

ADAPTED FROM THE 'KATECHISMUS DER PSYCHOLOGIE'

OF

FRIEDRICH KIRCHNER

BY

E. D. DROUGHT



LONDON
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AUTHOR'S PREFACE.

THIS Manual attempts to present Psychology to educated persons—more particularly to students, examiners, and teachers—in a popular though not superficial manner. My aim has been to make the reader thoroughly acquainted both with the present state of psychological investigation and with the difficulties of the individual problems; but any one who wishes to pursue the subject further will find suggestive hints in my numerous references to the literature of the science.¹

My point of view is neither one-sidedly empirical, nor purely spiritualistic. On the former view Psychology has nothing to do with the Soul, on the latter the body is the mere reflex of the mind. In opposition to the former view, I have discussed at length the nature of the Soul, its origin, and future; whilst I have diverged from the latter in trying to estimate the results of Anthropology and Physiology. Although not a disciple of Herbart, I have given a full analysis of his 'Statics and Mechanics of Ideas' and my objec-

¹ A large number of references to German books have been omitted as cumbersome and useless to the English reader.

tions to his theory (p. 210, &c.) I have devoted particular attention to Consciousness, Imagination, the Feelings, Emotions, and Passions.

I have, moreover, everywhere employed the genetic method (§ 4). The 'History of Psychology' (§ 3) will be welcome to many as an introduction to the science. Any one who has occupied himself with Psychology knows how difficult its problems are: I crave his indulgence if my attempted explanations do not always fully satisfy him. I believe, indeed, that in the difficulty of this science—so important for all other sciences—there may even be an advantage if the reader is thereby impelled to further and original reflection.

FRIEDRICH KIRCHNER., Lic. D.

BERLIN: *April* 1883.

The edition of Kant to which Dr. Kirchner refers throughout his work is that by Rosenkranz. E. D. D.

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PSYCHOLOGY.

INTRODUCTION.

§ 1. MEANING OF PSYCHOLOGY.

1. Of what does Psychology treat? Psychology is, as its name indicates, the Science of *Mind* ($\psi\upsilon\chi\eta$). Aristotle (died B.C. 322), who was the first writer on psychical (or mental) science, called his treatise $\Pi\epsilon\rho\iota\ \Psi\upsilon\chi\eta\varsigma$.

2. What is *mind*? The present work is an attempt to answer this question. At this point we can only say provisionally that *mind* is the substantial subject both of the ideas, sensations, and conations of any individual mind, which are incessantly changing, and also of the unbroken unity amid this change—*i.e.* of consciousness or self-consciousness.

(We may notice the names for *mind* as some evidence that *mind* exists. The Greek word $\psi\upsilon\chi\eta$ means *breath*, as also the Hebrew *nephesh*, Latin *anima*, and French *âme*. *Soul* means originally *that which flows*, and hence comes to mean *moving power*; cf. A.S.

Sáwel, Sáwl—Du., Ziel—Icel., Sála, Sál—Dan., Siæl—Swed., Sjöul—G., Seele—Goth., Saiwala.)

3. With what kind of mind are we at present concerned? Primarily with the human mind, that is, the individual human mind. We are only concerned with the minds of brutes in as far as the consideration of them is necessary for the elucidation of what is obscure or undeveloped in human minds. And, since every individual is influenced by society, we shall have also to refer occasionally to *Psychology as applied to societies of men*, which we may call *Ethnopsychology*. (Cf. Lazarus and Steinthal, *Zeitschrift für Völkerpsychologie*.)

Aristotle, in accordance with his definition of mind as the nature or entelecheia of a living being, included in his investigation animals and even plants, and not only the sensitive and intellectual, but also the vegetative manifestations of Being; although he himself in one place (*De Anima*, iii. p. 10, b. 433, 21) puts aside an inquiry as to the organs of connection between will and motion, such an inquiry being he says physiological. What numerous limitations the province of Psychology has experienced in successive ages, we shall see when we come to the history of Psychology (§ 3).

§ 2. RELATION OF PSYCHOLOGY TO OTHER SCIENCES.

4. Why is Psychology of fundamental importance? Because it treats of the nature of man. Our self-consciousness is a manifestly necessary presupposition of all knowledge. Little indeed as this self-consciousness would have wakened without an objective outer world, on the other hand, as little could the latter be thought of and known by us as something real without the

subjective knowledge of self. The world and man are thus in reality the only objects of all investigation. Since the former is only rightly known when we have inquired how it does and must mirror itself in thought, Psychology, which occupies itself with man, is the foundation of all sciences. And there are, of course, certain branches of knowledge of which it is in a more special sense the foundation.

It is immediately evident that *Æsthetics* has its roots in Psychology, when we consider what care artists and poets have to devote to the representation of states of mind. In like manner *Ethics*, *Educational Science*, and *Politics* must necessarily presuppose a knowledge of the human heart. For who would lay down laws on good and evil, on the education of children, on the guidance of nations, without knowing something of the procedure of our ideas, sensations, and desires? How much more rightly does he who knows man judge of his actions. How many mistakes in education, both private and public, are avoided by such knowledge. And as nobody considers him who has not studied physiology to be a good physician, so we consider those to be bad statesmen who, without any knowledge of Psychology, act as crude empirics. And *Sociology*, which investigates the necessities and laws of society, has just arrived at the knowledge that many social evils of our time have arisen from mental obliquity. Further, *Logic* undoubtedly depends upon Psychology. For while it brings before us the laws of thought, it treats of mind from one side only, whereas Psychology contemplates it in all its aspects. And whilst the former directs its attention to the phenomena of our thought, the latter penetrates to its funda-

mental nature. It is true that the difference between correct and incorrect thought does not exist for Psychology, for it contemplates thought only as a necessary natural process.

5. How is Psychology related to Metaphysics? As soon as Psychology, not content with depicting and co-ordinating states of mind, inquires into the substratum of these—mind itself—it touches upon the province of Metaphysics. For Metaphysics has to do with the ultimate principles of all being. In it all sciences end whether they deal with the visible or the invisible. But in saying this, we are far from identifying Psychology with Metaphysics, as is done by B. Beneke when he maintains that every science, Metaphysics not excepted, is only a 'psychological phenomenon,' consequently is 'practically Psychology.' It is true that all sciences are concerned with ideas and are so far of psychical origin (cf. Q. 4). But the examination of different classes of ideas devolves upon different sciences. Thus *e.g.* Psychology has only to deal with one object, mind; Metaphysics, on the contrary, investigates this object in its origin and its connection with other objects. Psychology seeks for the origin of the ideas of space and time; Metaphysics, on the contrary, inquires into their objective validity. The former shows how the idea, psychologically necessary, of Absolute arises; the latter examines whether an Objective Absolute really corresponds to the idea. Consequently Psychology ceases precisely at the point where Metaphysics begins.

On the other hand, Metaphysics depends in ways upon Psychology. The former is divided into Ontology, Ætiology and Teleology, as we have

where shown. But these three branches all need the help of Psychology. For Ontology, which treats of the objectivity of the external world, depends upon self-consciousness and mental activity as well as on the co-operation of sensory and motor functions. Ætiology, or the science of causes, of matter and forces, of space and time, is obliged to reason in analogy with psychical processes. In like manner Teleology, which directs attention to the ruling conformity to purpose in nature and history, uses chiefly human endeavours and actions as a type from which to draw conclusions as to the purposive activity of other beings. It is acknowledged that all religions *anthropomorphise*, that is, describe the Divine in human fashion: but does not natural philosophy to this day do so more or less? It speaks of the inertia of matter, of the resistance of atoms, of the reciprocity of their forces, of the goodness or the wisdom of nature, and so forth. And we cannot blame it for this. For it is partly compelled to it by the figurativeness of language, partly also by the fact that a man's own mind is more intimately known to him than anything else. We penetrate thus to the interior of nature only by the help of psychological contemplation. Hence the history of Metaphysics shows us that the Absolute must be always regarded as a psychological factor: the Stoics call it the *World-Soul*; Giordano Bruno and Spinoza, *Substance*, Fichte, the *true Ego*, Hegel, *Idea*, Schopenhauer, *Will*, Frohschammer, *Fantasy*, while by Leibnitz it is called the *Monad of Monads*, and it is represented by Herbart as a *Primary Real* quite analogous to our *Mind*. However much all these attempts are exposed to the danger of absolute idealism, yet he will be little inclined to condemn them who considers that

these systems are, and aim at being, nothing more than hypotheses that attempt to solve the innumerable problems of existence.

6. How is Psychology related to Natural Science?

To this question there are two quite different answers. According to one, Psychology belongs to Philosophy, according to the other, to Natural Science. According to the ~~former~~ it, together with Physiology, forms the science of man—Anthropology. In this view Anthropology has to study human nature in its entirety, (a) as the science of body (Somatology), which is again divided into Anatomy (*i.e.* the description of the structure of the body) and Physiology (the study of the organic mechanism); (b) as the science of mind—Psychology, which again has to treat it empirically (as to its manifestations) and rationally (as to the cause of these). The most consistent development of rationalistic one-sidedness is seen in the school of Hegel. To it the human spirit is but a stepping-stone to the Absolute Idea in its dialectical procedure. Hence Erdmann says that 'to understand the development of the subjective spirit is to recognise its right as necessary.' Thus he hopes to avoid the one-sidedness both of rational and of empirical Psychology. To him spirit is not a product of nature, but it is the negation of nature, and it 'truth.' But here whilst every phase of spirit is regarded as a higher step in his dialectic, and one which replaces and contains within itself earlier steps, does not succeed in explaining its manifest stops or retrogressions (mental diseases). As natural history, so Psychology also, is for Hegel's discipline an arbitrary framework of empty abstractions; in order to satisfy their dialectical method they do vi-

facts ; instead of deducing general laws from experience, they change states of mind into a series of conceptions arranged according to an illegitimate basis of classification ; they create artificial objections which do not exist, or extend others unduly. They overlook what is near in favour of what is distant, and deduce what is most obvious from what is most remote.

Partly from opposition to this view and partly on other grounds, many assert Psychology to be a natural science. Some hoped by this means to turn the interest of our times from natural science to Psychology, others made the assertion because they held a materialistic view of the world. In any case Psychology may be shown to be a natural science, since man as well as all else that exists belongs to nature ; as natural science studies the properties and laws of the body by means of outer experience, so Psychology investigates the expressions and laws of the mind by means of inner experience. But both sciences are not only distinguished from each other in their method and content, they do not suffice taken together to occupy the whole domain of the empirical sciences. For many facts belong at once to natural science and to Psychology, consequently to neither exclusively. Besides metaphysical questions (as to space, time, motion, causation, atoms, &c.), which are dealt with by both Psychology and Natural Philosophy, there are facts which must be examined by Physiology as well as by Psychology ; for many psychical processes are consequents of physical ones, and *vice versa*.

Therefore many, particularly Fechner and Wundt, have distinguished a special science, *Psychophysics*, whose province is to examine these border questions. But besides the fact that the recognition of a science

of Psychophysics would double the disputes concerning scientific boundaries—viz. between Psychology and Psychophysics on the one hand, and between the latter and Physiology on the other—the psychologist is in any case obliged either to investigate the physical bases of mental processes or to take them for granted.

And when the adherents of 'Psychology as a natural science' think to confer an honour on Psychology by pronouncing it to be as 'exact' as Physics (since they have to do respectively with the reduction of exterior and interior phenomena to 'Laws of Nature'), we must decline this honour on behalf of our science. For Psychology is already much more exact than Physics. The certainty of the cognitions of natural science is limited both extensively and intensively. Since it relies almost exclusively upon sense, it can only take in phenomena, and even these scientific induction never fully grasps. The way to ultimate principles remains closed to it, unless it takes refuge in hypothesis, which however is always a child of imagination, as is also Metaphysics so despised by natural philosophy. And yet natural science is, like all other human knowledge, surrounded by problems. Moreover, by reason of these, it lacks the assurance that all objects of external perception neither exist as we know them, nor exist apart from us. Psychology, on the other hand, which rests upon internal observation and has but little to do with external objects, possesses the advantage of immediate certainty. Only an overweening scepticism can deny that the states of mind are what I perceive them to be.

But when Lange, expressing the fundamental view of his fellow-thinkers, concludes that we should speak of 'Psychology without mind,' since mind

exist, *i.e.* that we should only speak of and examine the laws of psychical phenomena—we have no objection to make (see p. 4). For we ourselves have pointed out that the question as to the existence of mind is a metaphysical one. But we differ decidedly from F. A. Lange, in that we defend Metaphysics while he disowns it. Besides, it deserves consideration whether it is not—to put it mildly—only a verbal dispute, when anyone in regard to certain phenomena asserts them to be psychical in opposition to physical, maintains their reality and coherence, and yet will have nothing to say to any subject of them. He falls into the same absurdity, it appears to us, as those Hotspurs among Homer's critics who deny altogether the existence of Homer; as if that glorious epic poem must not, in spite of all differences in detail, have been created by one poet or more than one. But even if it be granted that the existence of a substantial substratum of psychical phenomena may be denied, still our antagonists have to examine into the origin and existence of these phenomena which are distinct from physical phenomena. Indeed, even the question of the immortality of the soul does not lapse for them, necessary as this might seem to be for a 'Psychology without mind.' For J. S. Mill, although himself an antagonist of all metaphysics, remarks:—'As to immortality, it is precisely as easy to conceive that a succession of feelings, a thread of consciousness, may be prolonged to eternity, as that a spiritual substance for ever continues to exist; and any evidence which would prove the one, will prove the other.' But even if the province of Psychology were more circumscribed than is really the case, by the exclusion of the question of the existence

Introduction.

nature of mind, at any rate the fabric of this science old in that case be destitute of foundation-stone or ystone. For in all our interest in mental processes, is precisely this metaphysical problem which is of the reatest importance for everyone, whether he admit it r not. In all science practical interest takes the first place. As we study Ethics in order to act better, and Logic in order to learn to think more consistently, so we study Psychology in order to understand ourselves, and by this means to acquire motives for faith and life.

And here we may just direct attention to the advantages which Psychology has over natural science. Its greater theoretic certainty has been already (p. 8) pointed out. In addition to this, it is occupied with the most important of all objects—the Ego; for does not this interest us more than all animals, plants, stars and so on? Interesting as are investigations of natural science concerning the phenomena of light, sound, electricity, &c., still the study of our own thoughts, feelings, and will must be of more importance to each of us. But the fact that up to the present time Psychology has made but small progress towards the much-to-be-desired goal of a universally acknowledged system, must not be held as a reproach to it. For it has to presuppose Physiology, a science which is acknowledged to be now barely half a century old. For astronomy physics, and chemistry have all not very long passed from the condition of arbitrary hypotheses to the position of established knowledge. Thus we should r deny to Psychology a possible attainment of perfect in some future time, when we look at the developr which it has hitherto made. Its condition hit appears the more inevitable when one reflects up

great complexity of the facts elaborated by it, and the obscure organisation of the co-operating forces.

§ 3. HISTORY OF PSYCHOLOGY.

7. How do the pre-Platonic thinkers represent Mind? The older Greek philosophers—and with them the history of Psychology first begins—were all Materialists. For the Hylozoists, Pythagoreans, Eleatics and Atomists all conceive mind to be a finer *matter*.

Thus Thales declared water to be the primary nature of all things that have minds. Anaximenes represented mind as air, since this element is necessary to breath and consequently to life; this is also the view of Diogenes of Apollonia who more exactly designates it as warm, sensible ether. Heraclitus also taught that in mind the heavenly fire has been preserved in a purer form, and consists of warm, dry vapour. Pythagoras declared mind to be both an isolated part of ether, and also a harmony; when joined to bodies it is in punishment, and is then as if in prison. Understanding he localises in the head, mind and feeling in the heart. Ideas are movements in the mental ether. Therefore he represented mind as a number in perpetual, self-initiated motion. In connection with this view we find the Pythagorean doctrine of the migration of souls, by which means individual souls finally return to the soul of the world, the harmony of the Kosmos.

Among the Eleatics, the philosophers of Pantheism, Parmenides placed the seat of mind in the belly (Plutarch, *Plac. Phil.*, iv. 5), and explained the process of reflection and memory by a conflict between the

fiery ether and the principle of cold (*Stob.* i. 796). Empedocles, who attributed the origin of all individuals to a mixture of the four elements, interpreted perceptions of sense by emanations from things; sense-impressions are united to consciousness by means of the afflux of blood to the heart. He adheres to the Pythagorean doctrine of the migration of souls, for he prohibits the killing of animals or eating of meat, since by doing so one is in danger of consuming one's own forefathers.

The Atomists, Leucippus and Democritus, who derived the multiplicity of things from the conjunction and separation of the smallest particles in empty space, taught that the soul consists of delicate, smooth, round atoms, which by their swift motion call forth all living phenomena. In death the soul is pressed out of the body, during life we constantly inhale new mental atoms by respiration. These exercise special functions in the different organs. Thus the brain is the seat of thought, the heart of anger, the liver of desire. Sense-knowledge arises from the emanations from things, these tear themselves free from objects and flow into the mind through the pores of the body. All perception thus arises from touch which moves the mind and thus give rise to ideas, that is, pictures of what is felt. With the above-mentioned thinkers we find the same complaint about the circumscription of human knowledge

8. In what respect does Plato rise above the Materialism? When Plato designated Mind (at least negatively) as simple, indissoluble, and immaterial placed it in direct opposition to Body. His doctrine of immortality, and comparison of the human soul with the World-soul, assigns to it divine rank.

God has formed the rational human soul from the same elements as those of the World-soul, although in a less perfect combination. The body as the instrument of this *immortal* soul has itself a *mortal* soul, the seat of the emotions, and this he distinguishes into a higher and lower part. The *former*, which relates to the protection of the earthly life, may be called a kind of instinctive courage, and has its seat between the neck and the diaphragm. The *latter*, placed between the diaphragm and the navel, embraces the sensible appetitive faculty, and serves for the preservation of earthly existence. The *immortal* rational soul, on the contrary, is placed in the head, so that it may rule the body and its psychical forces as from a watch-tower. This spirit is neither corporeal nor the harmony of the body, but a distinct, substantial, and therefore pre-existing being, which by some non-temporal act has fixed its earthly fate. The number of souls created at first by God and dispersed under the stars, always remains the same.

But the nature of the spirit is *dimmed* by its conjunction with the body as well in knowledge as in will and action. For as divine and human are combined in what is demonic, so does the mortal soul ($\psi\upsilon\chi\acute{\eta}$) conjoin *spirit* ($\nu\omicron\upsilon\varsigma$) and *body* ($\sigma\acute{\omega}\mu\alpha$). By this means the $\psi\upsilon\chi\acute{\eta}$ takes part in the changes of the body to which changed sensations correspond. Therefore Plato calls upon those who apply themselves to wisdom to make themselves constantly more independent of sense, that is, constantly to learn to die. For it appears to him indubitable that spirit is *immortal*.

The proofs of this are naturally of different values, as Plato himself allows. First of all he asserts that soul (here meaning spirit—*Geist*) is more closely related

then body to the homogeneous and self-identical, i.e. to the eternal. Then it belongs to the eternal, for it is timeless and only imaginable. But above all, there can only be an always unchanging number of souls; for if the immortal could proceed from the mortal, or created from the immortal, then finally only either life or death could exist. Since then all Becoming is a transition from one state to its opposite, from the living soul there must arise one that had died, and from the latter again a living one. This view is supported by recollection, by means of which we come to know things. *Souls* will then exist after this being ceases, as it had lived before it arose. Since, further, soul must be regarded only as the quickening power of the body, it must, in accordance with its concept, always remain so, independent of the fact that otherwise all movement would ultimately cease. Plato's descriptions of Being after death are, as must be expected, *fantastic*. His doctrine of *Metempsychosis* is very closely connected with his physical and ethical views. Our future fate shapes itself in correspondence with the dominion of our reason over the body; the righteous thrives under a congenial constellation; the unrighteous is changed into a woman at second birth; if he does not leave off wickedness into the kind of animal which his conduct makes appropriate, until through divers transformations he becomes sufficiently purified. (*Tim.* b. 42.)

9. What advance is made by Aristotle? He has in the first place, and in agreement with his teleological manner of regarding nature, conceived soul as the immanent purpose of body, and has logically carried out his principle of development. His classification of mental faculties is in agreement with this. But neither

the relation of soul to the Divine Spirit, nor its continued existence, is made clear.

Four fundamental principles dominate Aristotle's system: Substance and Force, Form and Purpose. The two first are as closely connected as are the two last; or rather, since motive force and purpose are contained in form, we have *two* fundamental causes—substance and form. Body and soul correspond to these. Aristotle defines Soul as the *entelechy* of an *actual* body, which has *possible* life (*De Anima*, ii. 1). As the form of a definite organism in which all the conditions of life are to be found, it contains the purpose of this life as well as the power for its realisation. It is thus its immanent vital and formative power. As such it is raised above corporeal Being and Becoming, it is rather the cause, nature, and purpose of its body, its principle and its unity. In this alone is the conception of it somewhat obscure, viz., that Aristotle assigns to it the same relationship to reason that nature holds to God; it is thus placed between phenomena and their ultimate causes.

The Stagirite gives *four* steps or faculties of soul corresponding to the four classes of beings. Vegetable souls have nutrition; in addition to this, all animals have sensation, more perfect animals can move in space, Man has reason. Each step is a necessary precedent to the following one. In Man they are therefore found all together; in him they successively reach their development. The vegetative function of nutrition conditions the preservation and growth of organisms, also their propagation, for the seed is the overplus of nutrition. Among sexless organisms, the producing power gives the form, natural environment the substance; in sexual procreation, on the other hand, the former (soul)

than body to the homogeneous and self-identical, i the divine. Then it belongs to the eternal, for invisible and only imaginable. But above all, t can only be an always unchanging number of so for if the immortal could proceed from the morta mortal from the immortal, then finally only either or death could exist. Since then all Becoming transition from one state to its opposite, from the li soul there must arise one that had died, and the latter again a living one. This view is supp by recollection, by means of which we come to k Ideas. *Soul* will then exist after this being cease it had lived before it arose. Since, further, soul i be regarded only as the quickening power of the b it must, in accordance with its concept, always re so, independent of the fact that otherwise all move would ultimately cease. Plato's descriptions of E after death are, as must be expected, *fantastic*. doctrine of *Metempsychosis* is very closely conn with his physical and ethical views. Our future shapes itself in correspondence with the domini our reason over the body; the righteous thrives a congenial constellation; the unrighteous is ch into a woman at second birth; if he does not le wickedness into the kind of animal which his c makes appropriate, until through divers trans tions he becomes sufficiently purified. (*Tim.* b-

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proceeds from the male, the latter from the female. *Sensation* is due to the fact that animals have a centre—the mind, in which the form of objects is imprinted, as if upon wax, by means of sense. The centre in which the peculiar sensations of the five senses unite and become ideas, is the heart; it takes hold also of the ideas which are inaccessible to the senses singly, such as number, time, and motion. Among the higher animals imagination, memory, and recollection are developed from this *sensus communis*; of these the latter belongs to human beings only. Sensation is also necessarily presupposed in *desire*, for where the former is there is found pleasure and pain; desire necessarily follows these, for pleasure is the object of life for all animals. Thus sensation gives rise to movement in space.

Reason, the peculiar property of mankind, is not very clearly explained by Aristotle. Firstly, he understands by it the mind's power of thought, but he does not make it clear whether he regards reason (*voûs*) as part of soul, or as something independent in its nature, origin, and duration. In any case it must have come to man painlessly, unmixed with and independent of bodily organs, imperishable, divine, and from without. *Noûs* contains the formal principles of cognition, and the chief axioms, which are given to it at the same time as its self-consciousness. This is the active reason to which the objective forms of objects (the intelligible) correspond. That which all nature realises in forms and souls unconscious and imperfect, exists in it as conscious and in concentrated form. But since soul, as a species of form, cannot be absolutely irrational, it is not necessary for *voûs*, as Aristotle thinks, to come from without to man. For it is *imagination* which

gives life and coherence to the concepts of the understanding.

As elsewhere throughout, so with reference to the understanding, Aristotle distinguishes in it substance and form, potentiality and actuality, action and passion. The *passive* understanding is our subjective consciousness which can receive all possible cognitions, whilst the *active* understanding, conformably to its nature, produces them. The former is, as matter, the changeable and relatively transient; the latter is, as form, the constant and eternal. The former is actualised by the latter—thus, consciousness receives insight and is made manifest (*De Anima*, iii. 4, 5). Thence Aristotle compares the relation between the two to procreation. Because the passive understanding needs the body, while the active does not, the latter is designated as imperishable. But if principles are undoubtedly imperishable, it is still not clearly explained how the source of principles can itself think, nor how the active understanding can be imperishable since it continually needs the passive understanding. It is equally doubtful if Aristotle taught personal permanence, for the active understanding which alone is eternal belongs not to the individual but to the whole. From a complete survey of his views, it appears to be more accurate to say that it is only to the universal human reason that he allows an eternal existence in God.

10. By whom was Materialism brought into vogue again? By the *Epicureans* and *Stoics*. A disciple of the Stagirite, Aristoxenus, had indeed earlier described mind as a harmony or tension of the different parts of the body; and Dicæarchus had denied that soul or reason is substantial. But Epicurus decidedly took

the view of the Atomists (p. 12). The only noteworthy feature of his view is that he distinguished numerous qualities in the mental atoms, from which he derived different temperaments.

One proof more that this materialist cannot deduce all psychical processes from matter, is given in the fact that his view places a special rational power in the breast; he also opposed a principle of thought to the universal vital power. And when he says that the power from which sensation and thought spring has no name, he thereby admits the inadequacy of his principle. His attempt to explain the *velocity* of sensation is interesting. It is because corporeal images are extremely delicate effluxes of objects that they penetrate so quickly through the pores. The theory of Epicurus has found a brilliant exposition in the didactic poem of Lucretius. He opposes immortality with peculiar earnestness. But he can interpret *sensation* as little as his master. For whence can it come—since single atoms have no power of sensation, to say nothing of empty space? The Stoics do indeed distinguish, with Aristotle, an active and passive principle. They, however, conceived matter and form to be of corporeal nature, though of a fine and fiery kind. Nevertheless they rise above Epicurus in so far that they do not refer everything to a movement of matter, but allow it to be animated by one divine power. God is for them a corporeal, fiery, or ethereal being, living, rational, working in accordance with the laws in which, as in a germ or seed, the world is in a most skilful manner foreordained. Their system is a teleological optimistic pantheism. Human souls are also an efflux of the divine ether, and are *corporeal*. For if incorporeal, soul could neither move body nor be separated from

it, and yet both events actually do take place. Some Stoics, as Cleanthes, admit that all souls live after death. Chrysippus on the contrary held that only the wise do so; some, again, taught that souls return immediately into the world-soul, while others supposed an intermediate state in which souls are purified.

In order to explain the unity of consciousness, the Stoics referred all mental phenomena to a 'ruling power,' which is indeed something higher than sensation and desire, and yet not wholly distinct from them. This diffuses itself from the heart through all the members like a warm breath. The Stoics distinguished eight parts or faculties of soul corresponding to the different instruments of reason, namely, the ruling part in the heart, five in the senses, one in the voice, and one in the organs of generation. The *freedom of the will* they defended by taking a distinction between outer and inner necessity. The former indeed conditions our ideas, but determination proceeds from ourselves. And even though our nature does not depend alone upon us, yet we are and remain the actors. To this extent the Stoics denied chance and arbitrary choice.

11. How far do the Middle Ages show a cessation of progress? All through the Middle Ages Aristotle bore rule; the most that was attempted was to unite Plato's views superficially with his.

According to Plotinus the Neo-Platonist, individual souls, analogous to the world-soul from which they have proceeded, have a place between reason and sense; they have descended involuntarily from the intellectual to the visible world for the time assigned to them. As the efflux of God the soul possesses three *intellectual faculties* subordinate one to the other:

(1) the contemplation of eternal truth and beauty, (2) rational judgment, and will, and (3) imagination, for seeing the forms of things. From this mental soul a sensuous one proceeds and animates the body, which is produced by the *world-soul*. This soul, too, has three faculties, namely, sense-imagination, which makes forms intimately present to matter; secondly, the faculty of sense-perception which receives these forms externally as the result of impressions; finally, the faculty of the desires, emotions, and passions of sense. The moral estimate of mankind is adapted to this view. The lowest virtue is moderation; the virtue which purifies mankind from all that pertains to sense stands higher; the highest is intellectual contemplation which unites us with God. Upon this depends the migration of souls, which is extended by Plotinus even to plants. For since a soul is united to its body on account of a fall into sin, the higher imagination is easily drawn down by the inclinations, desires, and passions of the lower soul, which in its turn draws down reason to the illusory sphere of sense. At the same time we never, while on earth, fully understand the machinery of our different psychical powers.

Tertullian (d. 220) who in other respects adheres closely to the Stoics (p. 18), set up in opposition to the generally received doctrine of *pre-existence*, *Traducianism*, according to which the soul of a child proceeds from the father's soul, as among plants a graft (*tradux*) is set from the parent stock. With the soul are transmitted the spiritual qualities, especially the bad ones, of the parents. In spite of this, sin is an act of our free will, for we also carry in ourselves the germ of good. Tertullian infers personal immortality from the

unity, indivisibility, mobility, and continual activity of soul; the resurrection of the body he maintains by ingenious analogies from nature.

Augustine (d. 430), in whom patristic speculation culminates, regarded the soul as an immaterial substance quite distinct from the body. It perceives every affection of the body exactly where it takes place, for it is altogether present in every part of the body. Augustine distinguishes as special functions, memory, thought, and will; of these the last forms the real core of our personality. The immortality of the soul follows from the part it takes in immutable truth, eternal reason, and life (cf. p. 14). What chiefly occupies him is the question of the *freedom of the will*. A man is free, according to Augustine, when he wills to do good; this freedom does not contradict either the omnipotence or the omniscience of God. The formal freedom by virtue of which we are able with equal facility to resolve upon good or evil (*liberum æquilibrium*) rightly seems to him to be a delusion. It is true that by his doctrine of predestination he entangles himself in contradictions. For whilst he logically traces back to God all that we think, will, and do, he represents for the most part evil will and evil itself as nullities, since he does not venture to derive these from God; and yet sin, by reason of its terribleness, is to him by no means a mere negation. He here exaggerates the just thought that the individual is nothing without the universal. The *seven steps* are interesting by which Augustine (following here Aristotle and Plotinus) holds that the soul mounts up to God: (1) the vegetative powers, nutrition and growth; (2) the animal powers, sensation, propagation, memory, and imagination; (3) the rational power of

the Ego, on which depend language, art, and science ; (4) virtue, as purification from sense ; (5) assurance in goodness ; (6) soul in its striving after God ; (7) soul in the contemplation of God (*De Quant. An.* 72 seq.)

Claudianus Mamertus, a disciple of Augustine (*cir.* 450), wrote against the view which was defended by many (particularly Hilary of Poitiers, Cassian, and Faustus of Rhegium) that the soul is corporeal. Faustus had asserted that the soul, like all created being, has matter and form—a circumscribed, consequently space-filling existence ; more particularly to it as to all created being quality and quantity belong. Claudianus remarks in opposition to this, that the soul does not fall under the category of quantity, for it has but one greatness, that of virtue and understanding, not of space ; its motion takes place in time not in space ; it environs the body and not the body it ; and the perfection of the world demands incorporeal as well as corporeal substance.

The Schoolmen joined themselves almost exclusively to Aristotle. Whilst Albertus Magnus (d. 1280) argued against Averroës, who asserted the unity of the immortal spirit in the multitude of transient human souls (Monopsychism), Thomas Aquinas (d. 1274) taught that the sensitive and vegetative souls form the embryo, the intellective soul on the contrary is added from without ; only the intellect works without an organ. All human knowledge is conditioned by the influence of the outer world ; innate knowledge does not exist. In addition to the other arguments for immortality, Thomas Aquinas has one peculiar to himself, namely that our desire to be eternal cannot remain unfulfilled ; the soul as an Entelechia forms for itself after death a

body like its former one. Besides, Aquinas knows already that man—the microcosm—has not three souls, but that the vegetative and animal souls are the basis of the intellective soul. From the one-sided emphasis which he lays on reason, he is in danger of denying the freedom of man's will; for this is not independent either in its motives or its aims, but in both is determined by reason, whilst without knowledge of the good no will exists, and the highest good is only attained by contemplation. Duns Scotus (d. 1308) on the other hand places the will decidedly above reason, for he makes God's will the absolute ground of the moral law. Aquinas is a Determinist, Scotus an Indeterminist; the former defends the Augustinian Predestination, the latter the Pelagian Synergism. The will, and it alone, is in his view the entire cause of volition, and that too an accidental cause, conditioned by no reason; understanding itself is for him a means, not an end. For the will has power to direct the thoughts (by means of liking or aversion), to restrain or to relax. Thus it is not developed thought that moves the will, but will moves undeveloped thought; the phenomena of our consciousness are necessarily produced, still they are not truly ours until they are held fast by the will. In knowledge itself will co-operates, not only as we often conceive it, when we *will*, but also in so far as we are active in perception, ideation, and memory; also the greater part of knowledge is indeed only belief. Take, for example, the immortality of the soul, which Scotus does not hold to be capable of proof.

12. How was the way prepared for later views? Independent views on the subject of the soul were made

public in opposition to ossifying Scholasticism ; they were also excited by the revival of classical studies as well as by a timid interest in natural science, though it is true that these views were shortly after suppressed by the Church.

Pietro Pomponazzi (1524) clearly takes the same point of view as Duns Scotus. For he holds that immortality is indeed evident, although incapable of proof. But his scepticism is clearly seen, although he tries to conceal it by his doctrine of twofold truth. Aristotle, according to him, can admit neither the creation nor the immortality of the soul, for it needs the body throughout. Against the objection that all religions taught immortality Pomponazzi remarks that these deceive in general as well as in particular, for only one of the three chief religions can be true. Further, the doctrine of immortality has only been invented for the satisfaction of the ignoble, who are not content with virtue and the reward that it carries in itself.

The visionary Paracelsus (d. 1541) distinguished in man—the microcosm—a visible and earthly body and an invisible and astral one ; the latter is the principle of life (spirit) which pervades all things. To bodily hunger corresponds imagination, by which the spirit draws nourishment from the stars and gains sense and thought, which are its food. Both constituent parts pass away, body returns to its elements, the sidereal (vital) spirit is consumed by the stars, but not until some time after death ; thence arises the apparition of spirits. To these two constituent parts now is joined—as the seat of eternal reason—*soul*, which has its origin in God. It is eternal, it dwells in the heart, and derives its nourish-

ment from Christ. Thus man unites all the qualities in which animals, angels, and elementary spirits have a part. The same view is held independently of Paracelsus by the physician and mathematician Cardano (d. 1576), with the exception that he defends the migration of souls as well as immortality; this migration he holds agrees with the periodical return of all things and with divine justice, because by this means not only is each individual the successor and heir of earlier individuals, but also the converse takes place. In relation to knowledge he distinguished *three* classes of men: the godlike deceive not, neither are they deceived; the sensually wise deceive and are deceived; finally, the wholly sensual do not deceive but are themselves deceived. Cardano's motto was, 'Truth is to be preferred to all else, and I do not consider it wrong to transgress laws for truth's sake.'

Bernardino Telesio (d. 1588), who referred all events to eternal matter which is acted upon by heat and cold, conceived spirit to be a very fine warm substance which has its seat in the blood, in the nerves, and especially in the brain, into the ventricles of which last it at times altogether withdraws. Sense-perceptions are neither mere consequences of external stimulus and co-operating activity, nor simple passive movements of the spirit, but are both together. All phenomena of the organism are derived by Telesio from contraction and expansion (*e.g.* of the blood-vessels). The immaterial immortal mind of which he speaks, as do Paracelsus and Cardano, and to which belong likeness to and knowledge of God, has no place in his system. For our affections, virtues, and vices proceed from purely mechanical combinations of powers.

Thomas Campanella (d. 1639), who languished twenty-seven years in prison and was seven times fruitlessly tortured, proceeds from sceptical principles. Nothing is in the understanding, he says (*Phil. Univ.* I. i. art. 1) which was not in sense; but the latter imparts only uncertain knowledge. But *that I feel*, the sceptic himself must confess, as well as *that I, since I think, also exist*. Thus self-consciousness is the starting-point for our knowledge, actions, and will. The soul must be a being which can accept, judge, desire, or detest. As like can only act upon like, it must be corporeal; it dwells in the brain and courses through the nerves as a fine vital spirit. The senses are the channels by which distant objects approach us. From the multitude of sensations as well as the synchronism of impressions of memory, it appears that the soul is not simple. Memory and the power of imagination combine sense-impressions for thought. Campanella rejects active understanding as well as innate ideas. Understanding is only the collection of half-effaced and confused partial sensations. Thus all knowledge is grounded on sensuous or historical experience. But as a second source of knowledge, the *internal sense*—that which judges, self-consciousness—joins itself to the first. For everything has the ‘fundamental capacities,’ of doing, of knowing, and of loving. Upon this Campanella rests the freedom of the will. In truth everything is necessary, and must, if it cognises at all, know itself as it is, and its will must correspond to its knowledge; necessity, fate, harmony, condition all things. But God has interwoven every individual will in His plan of the universe; will which proceeds from us contradicts, not necessity but compulsion, and makes up for the contingency of outer objects;

will is the essence of things. In fact, Campanella is a sensualist; he unites to sensualism some rationalistic elements, but they are only loosely joined to his scepticism.

The poetic pantheist Giordano Bruno (burned in 1600) who first placed himself outside of the Church and of Christianity, in conformity to his doctrine of monads, regarded the soul as a monad, that is a substance of the smallest size and indissoluble, which being at the same time body and force, continuously changes only figure and accidents. So, too, God, in whom all antitheses, as, *e.g.*, Aristotle's four fundamental principles, are abolished, is the Monad of monads; and all nature is endowed with spirit. As in all other things, our soul also is the central monad of the body, which working from within outwards, forms the body, rules and guides it; it is immortal, and never wholly without bodies, because they, as regards their substance, are also imperishable. Birth and death are only the expansion and contraction of the individual substance. The senses do not deceive us any more than understanding, although reason alone penetrates into the true connection of objects, and even it is not able to know God; Him we perceive only at times by means of contemplation.

Like Bruno, Andreas Cæsalpinus (d. 1603) held everything in the world to be animate, but did not ascribe a soul to all things. He also rightly distinguished the native life-warmth of the soul, and universal understanding which penetrates all things, from the individual understanding which stars, spirits, and men have. Spontaneous generation (*generatio æquivoca*) he extends even to men; the soul alone, this unity of the members, has its origin from God. It resides in

the heart, to which all sense-impressions flow. Still it perceives phenomena only, understanding alone knows the forms of things in themselves. Since the mind and understanding of man are united to matter, Cæsalpinus held that after death they dwell in pure, universal, and intelligible matter. Thus man shares in the contemplation of God when he has purified himself morally.

Finally, we must mention the materialist, L. Vanini (burned 1618), who identified God, nature, and matter. Mind courses as a material nerve-spirit through all the members as the form of the living in matter, and as creative form in the seed. From the nourishment received depends our vital energy no less than our vices and our virtues.

Thus materialism constantly breaks forth anew through the spiritualistic view of the time.

13. What contradictions characterise the seventeenth century? In pre-Kantian philosophy *Dogmatism* and *Empiricism* come particularly into opposition, and at the same time *Scepticism* also attains importance. Whilst dogmatism founds all science upon knowledge of the absolute which it holds to be possible, empiricism rejects this altogether and confines the tenor and method of its inquiry to facts of experience; finally, scepticism takes its stand on a pervading doubt as to all certainty, or at least throws doubt on the validity of every proposition that oversteps the bounds of experience. Thus the empiricist and the sceptic join hands. But on the other hand, the former, the empiricist, stands in opposition to both the other philosophic views, in as far as both of these see in reason the only source of truth. We may, therefore point to *Empiricism* and

Rationalism as the chief antitheses of philosophy before the time of Kant. We begin with the latter, and proceed to discuss Dogmatism.

14. What merit has Descartes in regard to Psychology? Proceeding from his motto 'I think, therefore I exist' (*Cogito, ergo sum*), which raised him above systematic doubt, Descartes (1596-1650) was the first to assert the entire diversity of mind and matter. He has defined the nature of mind by the attribute of thought, that of body by the attribute of extension. In truth, he helped materialism against his will by his doctrine of material souls which form the link between mind and body. He sought to explain animal life, and even human life up to the point at which it begins to control the emotions, as a mechanism, without the assistance of reason; for reason he claimed freedom and causal power.

Descartes holds the *existence* of the soul to be more certain than that of the body. For whilst sense-experience deceives us in many ways, our thought proves the existence of our mind. Indeed he falls into a circle, for he deduces the certainty of the axioms of reason from the proof for the existence of God, whilst for this proof he must presuppose that certainty. Further, he too hastily concludes that the Ego, by the certainty of its phenomena, is certified as *substance*. For clearness and distinctness are for him the criteria of truth. He declares himself against (1) the proposition that nothing is in the understanding which was not before in sense (cf. Campanella, p. 26), (2) the representation of the soul as a blank page. He holds firmly the doctrine of innate ideas, which only need to be developed by sense and imagination. Bodies them-

selves, Descartes holds, are discernible not by the senses but the understanding; for in themselves they are extended substance, and only understanding can comprehend their smallest constituent parts. Thus he turns decidedly against sensualism.

The existence of the *outer world* appears to him to be guaranteed by the fact that to our passive sensibility must correspond something active that excites it. But the corporeal and the spiritual are two totally different substances. Nevertheless he speaks of a substantial connection between body and mind, so that they form only one substance; and while no substance must be incomplete, he yet calls body and soul incomplete substances. Thence he even ascribes extension to spirit, at least the capability of it; he connects mind with the entire body, and locates it in the pineal gland. As all other bodies, the animal and human are two mere *machines*; when they stand still, there is death. From the blood whose circulation conditions life, the vital spirits are formed by the brain, and they are contained in the nerves. They cause movements and sensations, and as the result of these, desire, imagination, memory, and emotion. Descartes imagines these vital spirits to be like fine matter, which mounts up in us like wind or a flame, sets the brain in motion, and by this means occasions all sensible phenomena of life to the automaton—the body.

The nature of *mind*, which by God's creation is united to body, consists, as already said, in thought. The influence of each upon the other is only brought about by divine assistance. Mind thinks always, that is, it always has consciousness. In spite of the necessity of the mechanical system of the world, Descartes maintains

the freedom of the will. Will moves our understanding ; judgments and ideas are acts of the will ; it influences bodies themselves by means of the pineal gland. The movements of the nerves and the traces left thereby in the brain stimulate the soul to new ideas. Since the mind strives after clearness and distinctness, that is, after truth, but its union with bodies hinders it in this, the ethical problem of how to rule the *passions* grows up for us from the psychological problem. Among these passions Descartes reckons all that is a consequence not of the activity of the will but of passivity. Among these he reckons first of all non-voluntary functions and ideas of sense. Then those movements of feeling which are movements of the soul, and are caused or strengthened by the vital spirits. As primitive passions Descartes enumerates, wonder, love, and hatred, desire, joy, and grief ; these may all be reduced to wonder and desire. All others are secondary. As only what is clearly and distinctly known is *true*, so that only is *good* which furthers our freedom clearly and distinctly. Thus both intellectual and ethical perfection depend upon insight.

15. What is Occasionalism? By this is understood the consequence of Descartes' doctrine, according to which body and mind are totally distinct substances. Arnold Geulincx (d. 1669) taught that God calls forth ideas in the soul by means of corporeal processes ; and He moves the body by means of desire. Thus stimuli in bodies and voluntary acts of souls are but occasioning causes for God's operations, we ourselves are as mere spectators in the matter. In the same way Malebranche (d. 1715) regarded all powers of nature as expressions of God's constantly effective will. Bodies

manifestly do not move themselves, nor do they move the mind, God alone does this. A ball, *e.g.*, is indeed the natural cause of the movement which it communicates, but only the occasioning cause which the Author of Nature designs for the movement of bodies. We think, feel, desire, and act, only by means of God's continuous operations. As for the rest, Malebranche maintains, although as a mystery, the freedom of the will.

16. What were Spinoza's doctrines? Spinoza (1632-1677) a disciple of Descartes, raised the dualism of his master to pantheism, in that he conceived thought and extension not as two substances, but as the only two attributes recognisable by us of the one Substance (God). God does everything according to the necessity of His nature, but without self-consciousness and arbitrariness; individual existences are His modifications, which stand in a strict causal connection with one another. Nevertheless much remains enigmatical for Spinoza, for the modes of extension do not influence those of thought, but only accord with them. The order and connection of ideas is identical with that of things. Spinoza's theory of knowledge is particularly important in the first place, and then his doctrine of the emotions and of freedom.

In truth, according to Spinoza, only one Substance exists; individual things which are determined only by other individual things, are in time, which is a mere human mode of viewing things. Since, then, what is corporeal is brought about only by what is corporeal, and a process of thought by a similar process, Spinoza appears to give his allegiance to Occasionalism. But then all things express substance, *i.e. both* thought and extension, in a definite manner;

consequently everything, although in different degrees, is animated (*Eth. II., 13th Schol.*) ; that is, body and soul are one and the same substance, which is only called by different names as it is regarded under different attributes. In this view, *soul* is as little a peculiar substance as body, but is identical with the existence of the body, its *being* immediately affirming and including in itself the *concept* (Idea or consciousness) of its body. For in the great complication of the human body, mind consists of the Idea of all the states of the body taken together.

The first thing that the being of the human mind consists in is only the Idea of a really existing thing. The *unity* of this with the body consists in this, that body is its *immediate* object. All that passes in the body is thus comprehended by spirit ; on the other hand foreign bodies are comprehended only so far as they affect our body. Although thus the ideal and the real world stand in no immediate causal connection, yet they are one in the unity of their principle, and as regards substance. As a thinking being man is a modification of the divine thought, or a part of the infinite divine understanding. To this modification of the divine thought, a certain modification of extension must correspond, and the former must have reference to the latter, otherwise that Idea would not really exist. The more perfect its body the more perfect is the soul too ; for an Idea accommodates itself to its object. But since our body is affected by many other bodies and is itself no unity, we have only a *confused* idea of it. Still we ourselves have a consciousness of self because and in so far as God has a consciousness of us. The more our body has in common with others the more *adequate*, (that is,

clear and distinct), Ideas shall we have. Thus Spinoza explains the origin of general notions. Spinoza also asserts, like Descartes, that the truth of an Idea attests and proves itself. For the consciousness of a true Idea is due to divine determination of the human mind.

In respect to the lowest *knowledge*, that of ideas of sense, man rises to *reason* when he regards things in the light of eternity and necessity; but *intuition* stands in a still higher place, for it contemplates the nature of things in God Himself. But according to Spinoza, *will* and *understanding* are the same thing. Purpose, therefore, which is falsely held to be free, is only the idea or memory, or the *affirmation* or *denial*, of the Idea as Idea. (*Eth. III., 2nd Schol.*) Will does not exist as a particular faculty, there are only *acts of will*. The nature (freedom) of mind consists in intuition or intellectual love, with which God loves Himself.

By *emotions* Spinoza understands those states of *body* by which its capacity to act (to exert itself) is increased or diminished. What conduces to this is *joy* or *sadness*; and the *desire* to maintain the known bent of our nature. From these three emotions Spinoza ingeniously deduces all others.

17. What has Leibnitz done for Psychology? Leibnitz (1646-1716), who sought to reconcile mechanism and teleology, Democritus and Spinoza, assumes the existence of innumerable *monads*—that is, substance-atoms, or unextended centres of force which are only qualitatively differentiated by means of their Ideas. According to their place, which is founded in *pre-established harmony*, they reflect the world differently. *Body and soul* harmonise like two watches set so as to keep time together.

In opposition to Locke (Q. 18), Leibnitz asserted that there are *innate notions* and *principles*, of which naturally we first become conscious in *experience* (perception and reflection). Further he distinguishes between *primitive* (*à priori*) and *derived* truths. *Truth* is for him the result of spontaneous thought, so far as it produces its concepts and judgments from their simple elements without inward contradiction. Nevertheless the Ideas and axioms of our reason are founded in God Himself. For Leibnitz maintains the identity of being and thinking, of object and subject; the place of this identity is the Divine Spirit.

All *bodies* consist of two opposing forces—the conative (expansive), and the hindering (contracting). They are only the *visible* product of the union of *monads* which are held together by a central monad in accordance with physical laws. Since then all monads are souls, all things are *animated*, although in different degrees. In the so-called *inanimate* nature, the central monad is in a state of torpor; in *plants*, it is already the principle of organic life; in *animals*, we find instinct, perception, imagination, memory, and even the power of judging. Finally, in *man*, the central monad is mind, which recognises necessary and eternal truths and pursues aims with freedom. Birth and death are only the evolution and involution of the living being which already exists in the germ. The soul is thus never entirely deprived of its body.

Leibnitz rejects the physical reciprocal action of things as well as Occasionalism; since monads have 'no window,' their influence is only *ideal*—that is, in God's understanding and will. For from eternity a *pre-established harmony* subsists between the operating causes

in the region of necessity and the final causes in the region of freedom.

In regard to *free-will*, Leibnitz again denies both absolute indifference (*indifferentia æquilibrii*) and necessity of actions. Man has spontaneity, motives incline him, but do not necessitate him; we are under moral, but not under mechanical necessity; the soul, as a real automaton, has in itself the principle of all actions and passions according to the degree of perfection that is allotted to it. However, there remain here important difficulties. Does not the connection of body and mind, which harmonise like two clocks that are set together, verge upon Occasionalism? And it contradicts experience that bodies act as if they had no mind, and minds as if they had no body. Further, if all influence is from God, if all human actions depend on His predestination, man's freedom is illusory. For in that case he is subject to necessity. Meritorious as is the prominence given by Leibnitz to the motive power of the will, it is nevertheless again weakened by his assertion that motive does not necessitate us.

All monads are indestructible, but human souls are *immortal*.

18. What have all empirical systems in common? In opposition to Dogmatism, which deduced all knowledge from the absolute, empiricism supported itself in a one-sided manner, upon experience whether inner or outer, which it employed inductively. Mental life was analysed into a machinery of ideas, mental substance was denied. Sensualism defined it either as a sum of fancies which had arisen from arbitrary speech-symbols, or as the manifestations of material substrata in the brain. It is not to be denied that this material

tendency has proved itself fruitful in valuable psychological notions.

Bacon (d. 1626), the father of modern natural science, was, in spite of all the mistakes and narrowness of his views, the first to introduce the *inductive* method. Still he did not deny either the existence or the cognoscibility of eternal unchangeable forms. He distinguished the naturally produced *sensuous* soul in the brain from the supernatural, inspired, *reasonable* soul. The former has besides the perception that belongs to all bodies, that is susceptibility for impressions, sensuous perception. Understanding and will, the powers of the reasonable soul, employ themselves in logic and ethics.

Thomas Hobbes (d. 1679), the celebrated author of the *Leviathan*, excluded from philosophy as pure somatology, all transcendentalism. *Body* is that which has, independently of our imaginations, extension, substantiality, and existence. On the other hand, we only impute sensuous qualities to body because of movements in us the percipients. *Images* are the result of the movement which proceeding from external things reacts outwards in us. The echo of the stimulated sense is called memory or imagination. The names invented for the different impressions are counters which the wise man adds and subtracts. A combination of words which unites what is compatible is called *truth*. The movements of external things communicate by means of the air with our senses, and are thence imparted to the *brain*, and thence again to the *heart*. *Pleasure* and *pain* arise from an action that furthers or that hinders the movement of the *blood*. Hobbes explains the projection of sensation-images

towards the outer world, by the backward flow of motion from the heart towards the sense-impression, which manifests itself as a striving towards the outer world, (*De Corpore*, IV., 25, 2). But whilst he regards sensation quite materially as the movement of corporeal parts within us, he yet denies that sensuous qualities belong to things themselves—sensuous qualities are not the things themselves, but they arise first in us.

The first who consciously attempted an empirico-critical Psychology was John Locke (1632–1704). In the first place he proves that there are no innate concepts or axioms; experience is the only source of all knowledge. Understanding is always passive. For *simple ideas* arise (1), from *sensation* (sense-perception), (2), from *reflection* (internal mirroring), or (3), from both together. Of these simple ideas Locke enumerates extension, motion, colour, size; further, perception, thought, judgment, will, &c.: finally, pleasure and pain, existence, unity, power, succession, and the like. From simple ideas *complex* ones arise—namely, the concepts of *properties* and *substances*. Understanding forms all complex notions by means of combination, comparison, and abstraction, *e.g.* the notions of cause, connection, identity, mind, world, God. The essential attributes of mind are thought and will (*Essay II.*, 23, 18, etc.), still it does not think in sleep. Whether it is a substance Locke does not venture to determine, nor does he venture to assert its immateriality. In any case it is at birth a ‘*tabula rasa*,’ for nothing is in the understanding which was not before in sense. In truth, Aristotle had taught a similar doctrine before (*De Anima*. III. 4), but had imputed to the soul a co-

operation in the reception of ideas. Body and soul are both substances in Locke's view, only we cannot understand their nature.

Toland (d. 1722), who invented the word Pantheism, contemplated thought as merely a phenomenon which accompanies the movements of the nerves, as light does the galvanic current. Our voluntary movements are only material movements of complicated apparatuses.

D. Hartley (d. 1757) goes still further. He reduces mental functions to the association of ideas, and this again to the vibrations of the nervous ether; at the same time he holds firmly the belief in God and immortality. These vibrations, which point out the proportions of varying causes, are different according to strength, velocity, location in the brain, and direction. The repetition of the same vibrations disposes the brain to them more and more. The mental sensations of pleasure and pain are only echoes and associations of the sensual perceptions. Masses or bundles of associated miniature vibrations we call *will*.

Voltaire (1694–1778), the most intellectual pioneer of enlightenment, must also be mentioned here. 'I am body,' he says, 'and I think; more I do not know. . . . Who is the man who without ridiculous impiety dare assert that it is impossible for the Creator to give thought and feeling to matter?' The same view that mind is not immaterial, but only the movement of fine brain-fibres, is found frequently in the eighteenth century—in Robinet, Westphal, P. Wolff, and others.

But La Mettrie (d. 1751) proceeds much more consistently. Sense alone, he thinks, could show us the motive principle by means of which the heart beats, the

nerves perceive, and the brain thinks, and which we call soul. It grows with the body and wastes away with it. In illnesses it is clouded, food and drink influence it essentially. In the first place, I am certain only of my own sensation; I infer that of other men by means of their gestures and tones. These gestures are also exhibited by *animals* whose organism is altogether very similar to ours. La Mettrie, therefore, asserts that whatever feels is also material, without however being willing to venture on an explanation of how that is. He finds the principle of life neither in mind nor in the entire body, but in the individual parts of the body. Man, a machine just like animals, yet stands as high above them as an astronomical clock of Huyghens does above a common timepiece.

Finally, Holbach (d. 1789) wrote the 'Gospel of Materialism' in his *Système de la Nature*. According to this there is nothing but matter, which moves in different ways; nature, this great whole, works only in accordance with necessity, not in accordance with design. Man, too, is a mere material being whose internal movements we call thought, will, and in general, mental activity. But the soul is only a fiction, a useless doubling of our nature. For thought and will are modifications of sensation, which arises from affection of the brain. Association of ideas, deliberation, and resolution result by means of physical activity of the brain. The so-called mind cannot be separated from the body, with which it is born, grows, and dies.

By such one-sided views philosophy was, as we see, induced to set up 'empirical' Psychology by the side of 'rational'; indeed, after Leibnitz had by his monadology placed animal and human minds almost on

the same level, *animal* psychology was zealously studied, in particular by C. F. Meier (1749) and H. S. Reimarus (1760), the well-known writer of Wolfenbüttel.

19. What has Kant done for Psychology? I. Kant (1724–1804) has in the first place raised philosophy above the partial judgments of dogmatism and empiricism by subjecting reason to a fundamental criticism. Thus we owe to him a logical, although idealistic, theory of knowledge. Finally, he has deprived materialism of its basis. On the other hand, his apprehension of metaphysics is defective, wherefore he denies altogether the objectivity of the soul.

All our knowledge arises from *experience*, but in this way, that the *senses* only afford the material for it, it is from *understanding* that the form comes. But in phenomena also Kant distinguishes between matter and form, and adduces as pure *à priori* (*i.e.* *innate*) perceptions, space and time. These are thus the original universal and necessary activity of our mind by which it arranges its sensations. Untenable as this conception of space and time appears, it yet sets aside the supposition of dogmatists and empiricists that we take things to be in truth as they appear to us to be. According to Kant our Ego is affected by a quite unknown basis, the Thing-in-itself, yet we ourselves have first to connect sensual perceptions by means of pure *à priori* forms. Although *some reality* must lie at the base of the phenomena that appear, still our critic deprives us of any knowledge which ventures to overstep sensual experience.

Among the 'super-sensual apparent knowledge' combated by him, Kant counts the acceptance of a substance of the soul. The categorical syllogism perfects

itself indeed in the psychological Idea, but becomes subtilising or dialectical when it draws conclusions as to the being of the soul as of that of a cognisable object. Psychological Ideas are 'substantiality, simplicity, personality, and ideality,' *i.e.* the soul must be represented as the unconditioned subject of all internal changes. With the substance of soul is comprehended its immateriality, with its simplicity its immortality (incorruptibility). But now to assert its objective *existence* is, according to Kant, quite unjustifiable. For the thinking Ego can only be *subject*, and never *object* of knowledge, because it constitutes solely the formal condition thereof; and as little can it be intuited, because it only forms the formal condition of all phenomena, and at most it is capable of intuition in time (by the inner sense), not in space (by the external senses). Consequently all conditions necessary to judge that the soul is a substance, are wanting. Besides, the concept 'substance' is understood in the psychological syllogism in two different manners; the major premiss declares substance to be that which can only *be judged* as subject; the minor on the other hand declares that the Ego constitutes in all cases the *judging* subject. Further, rational Psychology has made the simple *idea* of the Ego a simple *substance*. But since the Ego represents no object, so its absolute unity can represent no simple substance. But we cannot on this account call it *incorporeal*, because *bodies* too are mere phenomena of our external sense and not things in themselves. The unknown *something* that lies at the base of external phenomena may thus be at the same time the subject of thought. Consequently the soul if it be regarded as it rightly should) merely as phenomenon, is, as

regards its substratum, not distinguishable from matter. (Here the subtilty of the Kantian argument comes clearly to light, for he not only does not refute the immateriality of the soul, but he supports it by the supposition of the animation of all corporeal things.) But even if the simplicity of the soul be *proved*, its immortality does not according to Kant follow, for it must change as to intensive magnitude. And again, from the fact that I know, as my own, different internal states, personality—i.e. the conscious unity of all changes—does not follow. For the rest Kant rejects *materialism* by declaring both bodies and souls to be mere phenomena, but the being of external phenomena (bodies) is as certain for him as that of our thought. Kant rejects the earlier theories of physical influence (p. 25), of occasionalism (p. 31), and of pre-established harmony. For him, the question as to the connection of body and soul is changed into that as to the possibility of the union of sense and understanding, or into the question as to how the intuition of space is possible for a thinking subject. Since these appear to him quite unanswerable, Kant holds the psychological problem to be insoluble. In other words, Kant has set aside rational Psychology as a *doctrine*, whether it be spiritualistic or materialistic. We may note that he in one place hazards the conjecture that the water which fills the spaces in the brain brings about the transfer of an affection from one brain-fibre to another.

20. What is the relation of Absolute Idealism to Psychology? +

Absolute Idealism, which is represented by J. G. Fichte (1762–1814), Schelling (1775–1854), and Hegel (1770–1830), has done nothing directly for Psychology.

The interest of these great thinkers was directed too one-sidedly to the principle of the order of the universe, so that it was not engaged by psychological phenomena. But Hegel at least was of much importance in formal logic, and all three have in general by their bold speculation stimulated and promoted philosophy in many ways, and consequently also Psychology.

Schelling has only in one place treated of the human soul and its relation to body. The former he designates as the indwelling power in everything of making the many present in the one. Being contained in universal nature it is the presence of all things. Regarded abstractedly, *i.e.*, as an individual soul, it presents only the intuition of things so far as they are in relation to this individual thing. Further, body is the soul itself so far as it enters into the finite relations of time and space, and into connection with other things. Body and soul are thus the inseparable sides of the same being; the former the finite, the latter the eternal. And the soul is that whereby body is continually dissolved into eternal existence; whilst it is made corporeal by its relations of time and space; yet, as a force eternal and everlasting, it triumphs over these relations. This, its inexhaustibleness, had been particularly studied by the followers of Schelling—Oken, Kieser, Schubert, Ennemoser, Steffens, and others.

Hegel, agreeably to his metaphysical prepossessions, regarded spirit as a universal being, destitute of individuality, whereas it is quite the contrary. He has not once attempted to explain the semblance of individual spiritual existence. For, as regards his pantheistic Monism, the objective individual soul does

not exist for it. According to Hegel, the individuating element in soul is nothing more than its intimate entwinement with part of nature, in which it thinks it perceives itself, thereby raising this to the dignity of its body; without this intimate connection with nature all Egos would appear as the same one, as unbroken reason, destitute of individuality. The similar idea of the Ego common to all is to Hegel a proof of the falsehood of individuality. From the ferment of the finite, as it works up in froth and foam, the divine spirit comes forth as a fragrant exhalation.

21. How did Herbart become a reformer of Psychology?

Herbart (1776-1841) whose metaphysical inquiries are also of interest, has in a special manner deserved well of Psychology. By his theory of a multiplicity of simple Reals, which are self-conserving, and penetrate one another, as well as by his theory of ideas and his denial of different mental faculties, Herbart has opened entirely new paths for psychological science which have already led to good results. Yet even here there is much which must make us pause.

Herbart teaches that an individual Real lies at the base of the Ego, the individual soul, which persists during the change of its ideas, and thereby becomes ever the more aware of this persistence. The idea of self arises by degrees, because it is the centre of the different series of ideas, or rather the constantly changing point of junction in the complex of ideas. The soul is thus in its entirely unknown quality, neither subject nor object of consciousness, but the true substratum of its self-conservation. Defective as is Herbart's establishment of his Reals, he has yet duly emphasised

the individuality of the soul. He has also pointed out the different degrees of intensity in all states of consciousness, although his attempt to subject them to mathematical calculation has failed. Since the soul must be a merely simple being, destitute of qualities and time-and-space attributes, Herbart refuses it any plurality of 'faculties'; it is not in space and time, has no innate ideas or indeed any faculty of ideation. Ideas are thus disturbances and acts of self-conservation of the soul, which, just like the monads of Leibnitz, owes these ideas to its connection with other Reals. For the rest, a very suggestive thought of Herbart's is, that ideas do not banish, but only mutually hinder or call up, obscure or illuminate one another. But his derivation of consciousness, self-consciousness, and the Ego is not successful. For since the nature of the soul is as little qualitatively distinguished from other Reals as its ideas are from their self-conservation; and the ideas that the soul 'experiences' only come and go in it, it is not discoverable from whence self-consciousness can come. A merely simple Real can neither experience disturbances and self-conservations, nor, by means of contact with other Reals, develop into consciousness of itself and of others. Indeed the true notion of the soul is merely postulated by Herbart, not established by his principles.

22. What does Beneke's *New Psychology* teach? As Herbart revived Leibnitz's monadology, so did Beneke (1798-1854) Locke's sensationalism. Experience is for him the only source of knowledge, all philosophy is merely applied Psychology. He deduces the more complicated mental processes from four *fundamental processes*—namely, the process of the appropria-

tion of stimulus, that of the formation of new, fundamental psychical faculties, that of the transference of stimuli, and that of drawing together and blending of homogeneous images. The difference of body and soul is not a specific difference, but a difference of degree.

The soul, a modifiable force, striving towards activity, forms for itself continually new fundamental faculties. The antithesis between it and body is as little a specific one, as is that between the spiritual and the sensual. For the spiritual originates from the blending of the 'footprints' of the sensual. The force of the internal persistence of whatever has once been excited in the soul conditions all mental processes. Only our original capacities are innate, that is, our vital and muscular powers. Beneke finally enumerates as *fundamental processes*:—(1) the *appropriation of stimulus*, i.e. the energetic reception of external stimuli; (2) the *drawing together* of the homogeneous; (3) the law of *compensation* of moveable elements, i.e. of stimuli and original capacities. That which, still unknown to consciousness, persists in the soul is called *footprint* (*Spur*), and this is the foundation of the so-called mental faculties. By transference of the wealth of stimulus which has been received the footprints are revived, i.e. they come into *consciousness*. A special faculty of memory does not exist; according to Beneke it is only the persistence of ideas, and one might just as well attribute memory to these ideas. Self-consciousness or the Ego-group is a complex of ideas which arises very gradually; it makes itself the centre of all ideation, feeling, and conation.

23. What is the outcome of the history of Psychology? In the first place it is evident that no *dualistic*

view, in accordance with which man consists of two contrasted substances, can solve the psychological problem.

Strict *Idealism* is just as untenable. It reduces body and soul to one, it conceives of soul as the active principle of body, which is mere appearance, merely a 'Position' (= positing), a symbol of spirit, which by its means develops into a soul. But idealism can neither explain the multiplicity of human organisms, nor the development of minds. Whether it refer them to an original difference of minds subject to equal laws of development, or to contingencies of development from original equality, it is unsatisfactory.

In opposition to this theory is *Materialism*, which in truth also identifies body and soul, but derives the latter from body, sometimes in an atomistic and sometimes in a dynamic fashion. In modern times it designates the soul as the phenomenological expression of the brain, or the sum-total of the sensations of the brain (Pfüger), as the resultant of the individual nerve-processes, or of the blending of matter in general (J. Müller), as nerve-fluid or ether (Sömmering), or as the flower of the organism. All these theories, suggested more or less confidently, forget that the sameness of soul and body is a proposition neither self-evident nor proved by facts. Facts permit us to conclude that there is reciprocity between these factors, but not that they are identical. Further, the materialist can in no way explain the nature of ideas and of consciousness. For neither can life in general, nor mental life in particular, be deduced from the mere combination of simple elements. And what is gained by saying that a certain state of the soul is the vibration of the fluid matter of

this or that nerve-fibre? Further, the one-sided assertion that *bodies* are our only data, is in fact false; for our consciousness is a fact prior to any corporeal data which may be given us. Therefore it is no advantage to set, in the place of the suspected notion of *soul*, the metaphysical notion of *matter*, which is at least equally obscure. As little is gained by making Psychology a branch of nerve-physiology, which as yet offers but few assured results, not to speak of the moral and æsthetic scruples which are opposed to materialism.

Both theories, the idealistic and the materialistic, pass easily into *Monism*, which equalises absolutely mind and matter without reducing the one to the other. Body is here the 'final phenomenon,' the 'objective externality' of the soul (both are *idem per aliud*). This doctrine first appears as Pantheism in Spinoza (p. 32); according to it body and soul are in themselves unsubstantial, and only phases of the one being which manifests itself in both these ways. Later, Schelling and Hegel taught similar views (p. 43). Thus many problems appear to be solved, as that of life as a result of generation, the influence of imagination on the fœtus, the origin of language, and the like. But neither of these identity-systems is fair to personality. We must also ask, on whichever side mind and matter are finally. Is personality compatible with idealism or materialism? The fact of individual consciousness is so irrefragable, that the conviction that soul must be an *individual real* follows as a result of monism. Schelling's *absolute indifference of the subjective and the objective* proves itself on closer inspection to be only an artful negation of the existing antithesis, which is in fact the mainspring of the construction. Hegel's doctrine of

Pantheism, which places an Absolute at the head of all things, must yet let this Absolute develop in a dialectical process of becoming. Therefore Herbart introduces his doctrine of universal plurality, which from the union of many simple beings deduces the appearance of things. But Herbart also does not get beyond an external co-existence. His 'beneficent arrangement of providence,' like his pupil Lotze's (d. 1882) 'purposive arrangement of the organisation,' reminds us vividly of Leibnitz (p. 34). But experience teaches that *body* and *soul* rather lead a *common* life with inseparable common development.

§ 4. METHOD OF PSYCHOLOGY.

24. What methods of inquiry are there in general? *Method* is a manner of inquiry in accordance with determinate principles. As we can proceed either from the singular to the universal, or *vice versa* from the latter to the former, we distinguish in the first place the *analytical* and the *synthetical* methods. The former, *induction*, proceeds regressively or empirically; the latter, *deduction*, progressively or constructively. Empirical Psychology is in allegiance to the former, rational Psychology to the latter. Since both methods have proved to be *one-sided*, we will employ a *third* method, which by the union of both the others avoids their one-sidednesses.

That one-sided *induction* is untenable is shown by the following considerations—It proceeds from abstractions; for our self-observation does not by any means give us simple individual phenomena, but a complex impression of collective ones, which constantly changes.

The assertion that we have observed this or that feeling, thus presupposes analysis and abstraction. But these are conditioned by the *aim* that is set before them by the principles on which they proceed, so that the exactness of the induction is made open to question—also by the fact that all psychical phenomena are in constant change and in intimate relation to one another. Finally, this method cannot dispense with the conceptions of substance, change, causality, space, time, &c., the inquiry into which leads unconditionally into the suspected questions of metaphysics (cf. Q. 5).

Conversely again, *deduction* has to refer to experience, if its problems are not to be of no significance. It does not do merely to define the nature of an idea, its particular character must be empirically ascertained. Therefore it has been proposed (e.g. by Waitz) to divide Psychology after the manner of natural science into Descriptive Psychology and Scientific Psychology with their subdivisions—Comparative Psychology, the History of Development, what may be called *par excellence* the Natural Science of Mind, and Anthropology. Unsuccessful attempts of this kind appeared in the form of a reaction against Hegel (p. 6).

Our *genetic* method also collects observations, like induction, but from established metaphysical standpoints. These provide the form for the matter, which latter they owe to induction. Our method proceeds in the first place just like the investigation of nature; it seeks to establish facts, to explain them, *i.e.* to find out a law for them, in order finally to mount to the universal cause of phenomena. But the genetic method then joins to this the speculative element, that which the investigation of nature renounces, the inquiry into

the nature of the soul in order thence to comprehend phenomena. For nature evolves itself necessarily in its phenomena. This is the point of view of (among others) C. G. Carus's *Lectures on Psychology*, 1831, J. H. Fichte's *Anthropology*, 1856, George's *Handbook of Psychology*, 1854, W. Volkmann v. Volkmar's *Handbook of Psychology*, 1875, and Herbert Spencer's *Principles of Psychology*, 1855.

25. What is the meaning of psychological observation? All observation—the principal source of induction—is methodical perception. Since psychological observation, without which our science would be impossible, is an *internal* perception, it is distinctly different from the observation in use in natural science. For whilst the latter can coolly and calmly take its stand in relation to objective phenomena, in all psychical phenomena we are at the same time object and subject. In order to observe them calmly and objectively it is necessary that they should have already taken place. Into what fantastic errors a psychologist who ignores this fact would fall is shown, *e.g.* by Fortlage, in whose two-volumed book a genuine observation is hardly to be found. But those go too far on the other side, who, like Comte, Maudsley, A. Lange, and others, entirely reject the *internal perception* of psychical processes.

We have in the first place, as an excellent means of observation, *memory*, which reproduces emotions, ideas, &c., which we have ourselves experienced, so that we can reflect upon them at our ease. (Aristotle himself advised poets (*Poet.* 17) to make violent gestures in order to put themselves in a passion.) Ethics, pedagogics, preaching, and pleading draw their strongest

appeals from experience. Next we have *imagination*, which lets us judge of the states of mind of other people from their words, mien, and gestures, and thus comes to the help of perception of self which would otherwise be one-sided. This means of help is, indeed, as is also memory, exposed to many illusions, but they supplement one another. The study of *autobiographies* is worthy of recommendation for this reason, for as Feuchtersleben observed, one can see in them not so much what they *relate* as what they involuntarily *betray*. More particularly important is the observation of the *simpler* mental life of the undeveloped, *i.e.* as well that of infants and children as that of savages and uncultivated persons. The observation of animals, too, will not be useless (Q. 3). It is further of the utmost importance to follow the course of *morbid* mental states, and of their cure; and here we may include the case of those *born blind*, whether of those who have afterwards gained sight or not, for they promise us insight into the domain of sense-activity. Then the study of criminals, of oddities, and singular individuals (*e.g.* Kaspar Hauser), of epoch-making men (princes, statesmen, artists, &c.), and epoch-making events—such as the Black Death, the Plague—offer rich material. The history of the development of the individual and of all humanity offers many analogies. Even Plato (d. 347 B.C.) believed that the three grades of society corresponded to his three mental faculties, as did also the three national groups: Egyptians and Phœnicians—Northern Barbarians—Hellenes. Thus individual psychology is furthered by that of nations.

We can arrange all these observations under *four points of view*: (1) the observation of one's own self;

(2) one's own observation of others ; (3) the self-observation of others ; and (4) the observation of others by others. As helps in psychological perception, we may further recommend physiological observations and comparison of languages, ethnographical and statistical inquiries, as well as the study of the masterpieces of music, poetry, and the mimetic arts.

26. What is the importance of the mathematical calculus? Kant (d. 1804) refused Psychology any prospect of ever becoming a science in the true sense of the word, because mathematics cannot be applied to psychical phenomena ; since, though these have their course in time, they have no spatial extension. And yet Wolf (d. 1754) had already advanced a 'Psychometry.' And Herbart (d. 1841) has most energetically attempted to apply the mathematical calculus to the relations of ideas, to their grades and intensifications. His pupil Drobisch has followed him, but he, nevertheless, allows that the computed relations can never be controlled by actual measurement, as in nature. In his view Mathematical Psychology does not by any means determine the metaphysical nature of the soul, but only seeks to bring the given phenomena of consciousness into mathematical connection. More lately Fechner has attempted to measure the intensity of psychical phenomena by using as a measure the physical stimulus which lies behind them. Finally we must mention Wundt, who, approving of Kant's view, thinks to find in intensity the second dimension demanded by it (*i.e.* by Kant's view).

On the other hand, no rational person can deny the fact that *quantitative* determinations of mental life can be calculated. One can undoubtedly attempt to bring

under precise formulæ the strength, reaction, blending, and movement of ideas and sensations. Neither the dignity of philosophy nor moral interests are thereby injured. It must be demanded, however, whether mathematical Psychology, on account of the impossibility of finding a measure for psychical magnitudes, and the inapplicability of mathematical axioms, promises great results. In no case can it compute individual states of mind, or even solve the most difficult problems; for it has nothing to say about the nature of the soul, its connection with the body, the origin of ideas, and many other similar questions.

27. What is the meaning of verification? The different forms which *induction* can take have been applied to Psychology. As *natural history of the soul*, it has been attempted to describe and to classify the appearances of consciousness according to their similarity; this was especially the case in the older Psychology. On the other hand, the natural-scientific tendency tries to explain psychical facts by analogy with *physics*, by laws and hypotheses. The method of Herbart attempts a formal *anatomy* of consciousness by analysing phenomena into their final elements—ideas. On the other hand, our *genetic* method makes use in the first place of the products of induction, and deduces therefrom laws, in order once more to *verify* them by facts. This is done by subjecting every conclusion either to logical laws in general or to intuition, before we accept it. We also try by inductive methods to get confirmation for the laws which we have discovered deductively or synthetically.

§ 5. DIVISION OF THE SUBJECT.

28. According to what points of view can we classify? Every science can be regarded either according to *method*, or according to its *content*, or according to its *extent*. If we divide according to *method*, we have empirical and rational Psychology; the *extent* must be circumscribed by either treating of the Psychology of the individual and of society, or that of the healthy or sick individual. But since (according to § 4) we unite both methods, and since the last-mentioned partition is untenable, we will regard the science with reference to *content*, *i.e.* to its *problem*—which is the *soul*. In order to know it completely we have to proceed from the more simple to the more complicated.

29. What division results from this?

I. The nature of the soul.

II. The mental faculties, namely ideas, feelings, and conations.

PART I.

THE NATURE OF THE SOUL.

§ 6. SUMMARY.

30. From what has our inquiry to proceed? Since we wish to approach a deductively fixed goal by an inductive way, and wish to verify all assumptions, we must proceed, when possible, from a basis whose certainty is acknowledged by all methods. This basis is undoubtedly *consciousness*. For whether it receives its substance from *without*, as sensualism asserts, or from *within*, as asserted by rationalism, or from both sides *simultaneously*, as we believe; whether the *external world* really exists, or according to the idealistic view is only a subjective appearance; whether soul be regarded as substance in itself, or only as the result of the physical organism: *consciousness* is a fundamental fact which is denied by no party.

31. Of what shall we treat in this part? Our exposition has to do *three things* in order to establish the nature of the soul: *First*, to investigate the nature of consciousness; *secondly* to examine the results of physiological research; and *thirdly* to develop the metaphysical conception of the soul.

§ 7. CONSCIOUSNESS.

32. How are physical and psychical phenomena distinguished? According to our theory of knowledge, all that we in general can know consists of *ideas*. Psychical phenomena are, in the first place, distinguished from physical by the fact that the former have ideas for their foundation, whilst the latter are caused by some stimulus from without. However this process is accomplished in the individual—we return to this later—all notions, judgments, inferences, all mental movements and conations, presuppose ideation. On the other hand, we refer all physical processes to the reciprocal action of things, which united in a world of time and space, call forth in us sensations by means of sense.

? A *second* distinction is joined to this, namely, that we take up all psychical processes by immediate perception, and are thus assured of them by much greater evidence than we are of physical processes. We can never specify quantity and quality, motion, distance, figure, &c., of natural things with the same exactness as we can our own states (cf. above, p. 8). In this the absolute idealism of Berkeley, Fichte, and others has a decided advantage over materialism, for the only things that we really perceive are our psychical phenomena. For even if we do not go so far as that consequence of this theory which denies the objective external world, we must allow that we never exactly perceive physical processes as they really are (for if we did they would take place *in ourselves*), but we only perceive signs, which nevertheless we believe to be in perfect correspondence with these physical processes.

Again, psychical processes differ from physical ones

in this, that the former are *not extended*, whether extension be held to belong to 'things-in-themselves' or not. This, according to Descartes, Spinoza, and Kant, is a certain criterion.

As a last difference we may say, with Brentano, that psychical phenomena have *immanent objectivity*, i.e., in every idea something is presented, in feeling something felt, in conations something desired or abhorred.

Aristotle speaks of this 'psychical indwelling' when he says, that which is felt is in the sensitive subject, and that which is thought of is in the thinker. Here comes in the Logos-doctrine of Philo and of Augustine, as well as Anselm's ontological proof for the being of God, which he proves from his own mental existence. Scholasticism speaks of the 'intentional or mental existence' of an object.

33. What simple processes are discovered by self-observation? Every one who observes himself even for a moment, perceives in himself a web of manifold *conditions*. He feels *that he lives*, and he feels also whether his condition is pleasant or not; then he feels himself strong or weak, healthy or ill, glad or sad. He feels that his heart beats, his pulse throbs, the blood rushes to his head; he feels heat and cold, pressure and pain, tastes and noises.

Besides these *sensations* which are more or less obscure, we observe in ourselves a multitude of ideas of all kinds, i.e. images of things and of events which come into view either separately, or joined one with another. Many of them are indifferent to us, others, again, excite our pleasure or our abhorrence.

If they are ideas of *past sensations* they merely excite the feeling of pleasure or pain. But if they

present to us the *present* or the *future*, they cause a state of disturbance; we endeavour to transcend our present condition because we desire the presented thing. That disturbance of feelings and ideas which fluctuate to and fro, always ends with a *determination* of the *will* either to renounce the attainment of what has just been desired, or else *to do* something which will bring us nearer to this goal.

Sensation, ideation, and conation are thus the different states of our inner being.

Each one soon observes that all these states *differ* much as to degrees of clearness, of intensity, and of duration. He also observes that they often *pass* one into another. What was but just now only a distinct or an entirely indifferent idea, suddenly instils a lively pleasure, so that we earnestly *desire* it. But since we cannot immediately obtain it, we are in time withdrawn from it, either by quiet consideration, by further occupation, or in some other way: a *feeling* of longing for it may indeed persist for a time, though much weakened—till at last that which was once so ardently desired becomes again a mere *idea*, often indeed an empty notion.

34. What have all psychical processes in common?

Besides the multitude of ideas, feelings, and conations which we continually find in ourselves, we have always a consciousness of the *unity* of the observed state, *i.e.* besides the individual idea, feeling, or conation there is the total impression of our synchronous condition. From this it follows that all these states are in a state of *reciprocal action*, and that they must be conditions of the *same* being.

This is in the first place only a *logical* conclusion;

whether it has any *metaphysical* worth we shall see later (§ 9).

35. What properties has consciousness? Its first property is *simplicity*, for we observe in it no heterogeneous parts; therefore it cannot be further described. It is simply a fact which each one experiences in himself.

Next we observe that our consciousness of anything is at times strong and distinct, at others weak and obscure. Often it is occupied with many things at once, often with only a single one. Each state is a consequence of the other. For the more objects there are in consciousness at one time, the more do their images obscure and weaken one another.

Leibnitz in particular has pointed out the importance of 'obscure' ideas in our mental life. For from these arise those inexplicable dispositions and singular resolves, whose suddenness would otherwise be an insoluble problem.

That the consciousness of anything becomes stronger, more distinct, more lasting and more comprehensive is a consequence of *attention*. We may compare it to the pupil of the eye which can direct itself at once to one or to many things. In each case the width of the circle of observation will naturally be in inverse proportion to the illumination of its individual points; *i.e.* our attention will be the more intensive as it is the less extensive. It is called *involuntary* when it is aroused and directed by sense-stimuli, *voluntary* when by direct acts of will.

We shall characterise these processes more exactly later.

36. Is there an 'unconscious' consciousness? The

may sense in which we here use 'consciousness' does not of course refer to (1) the moral feeling of guilt, or (2) external perception (in opposition to loss of consciousness), which senses are indicated when we say 'I am conscious of nothing,' or 'he returned to consciousness.' We understand by it the self-perception which accompanies all psychical acts. The question, therefore, is, are there *unconscious* psychical acts? *Sh*

Besides E. v. Hartmann, the philosopher of unconsciousness, many psychologists since Leibnitz have declared themselves in favour of an affirmative answer. Still the *proof* of unconscious psychical phenomena is difficult; for in order to be experienced they must be *known*. But their defenders assert that certain facts of experience compel us to accept unconscious states as their *cause* or as their *effect*.

But what is adduced as proof fails in *certainty*, as clairvoyance, presentiments, forebodings, and the like. Or if the activity of genius is pointed to as unconscious, it may follow from this that many persons can give no account of it, but it does not prove the unconsciousness of artistic creation. Other facts, such as dreams, the power of delirious persons of speaking in strange languages, the wonderful memory of idiots, the last bright gleam of the expiring spirit, and the momentary disregard of our surroundings, the details of which immediately after recur to us—these and similar facts are explained by association of ideas and by memory. That a waiter who was fast asleep in a noise, could not be awakened by a call or by his name, but only by the word 'waiter,' proves nothing but that it was that which was so joined with his accustomed ideas and feelings as to be able to overcome his deep sleep.

Certainly ideas and feelings call forth bodily movements unaccompanied by any direct expression of will. But these are processes which only belong to a part of the *psychical* life.

As little is proved by the examples from which it has been desired to conclude that unconscious psychical acts are the *effects* of conscious ones. Leibnitz, and even Zeno the Eleatic, have asserted that we hear unconsciously the fall of drops of water, since a great waterfall consists only of innumerable individual drops. But this conclusion is false, for our organisation is not at all susceptible to some sense-stimuli, and distinguishes in itself a sum of forces not only quantitatively but also qualitatively from the effect of their collective total. And even if we often remark in after-images particulars which we did not perceive in the object itself, this also proves nothing; for it is not the earlier sensation but the continuation of the earlier physical stimulus, that gives rise to the so-called after-image; it may well lead later to that sensation and reflection from which it was hindered at first by some obstacle or other.

Yet another proof has been attempted for unconscious psychical phenomena. If there are not such, says *e.g.* Herbart, one must have at the same time the idea of a tone, and the idea of the idea of a tone; and of this, too, one must have an idea, and so on for ever, or until we come to an unconscious idea. On the other hand, it may be said that the idea of a tone and the idea of this idea form but one psychical phenomenon, which is only analysed by referring it partly to a physical object and partly to a psychical phenomenon. The idea which accompanies a psychical act belongs

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then to the object with which it is concerned. Thus we perceive psychological processes without, as was before (p. 52) allowed, being able to observe ourselves. The tones which we hear we can observe, but not the *hearing* of the tones. But this is not necessary; for the consciousness of the idea of the tone concurs with the consciousness of this consciousness, because it is not a consciousness of this idea but of the whole psychological act in which the tone is presented. Aristotle's doctrine is similar, for besides what he says in the place above referred to (*De Anima*, iii. 2), he says in his *Metaphysica* (xii. 9), 'Knowledge and sensation, and opinion and reflection, always appear to be directed to something else, but only incidentally to themselves.'

Still, on the other hand, we would appear to be warranted in assuming that the *intensity* of a sensation (hearing, seeing, and the like), and the *strength* of the accompanying *idea*, are like one another; and this is borne out by *e.g.* the fact that a miller awakes as soon as the clapper of his mill ceases; the above adduced fact about the waiter (p. 62) also comes in here. But in both these cases it is the aroused sense of *duty* which effects the awaking; and in the former case it is not that the miller perceives in some unconscious way the non-clapping of the mill, but his attention is excited in a lively manner by the contrast.

The pretension that there are unconscious ideas arises in this way, that in many purely mental acts *physiological* processes also come into play. We must assume that the soul originally knows nothing as to how it can set the individual members in motion. It must *first learn* this, and in so learning it is assisted by the fact that in youth the muscles try numerous move-

ments of all kinds, which in after life are more or less voluntary. If, then, it desires then to make this movement, it reproduces that organic sensation which it had at the time when the movement was performed involuntarily. Thus it now follows in the track of the remembrance, by which alone there had been aroused the present disposition to make the movement. Where no original movement or disposition to make one exists in the body, the will alone produces no movement. Therefore A. Bain gives as a necessary condition of all action a special sense—the *muscular sense*. The numerous cases in which from involuntary movements voluntary ones arise, have been wrongly given as unconscious psychical acts. Examples of this kind are: focussing, *i.e.* bringing the object into the place of most distinct vision; sitting, running, grasping, and talking; sucking, spitting, smelling, and the like. In a similar manner the whole physiological disposition and bent is a necessary condition of all psychical processes. But in every case movements &c. become psychical by the fact that we direct attention (either voluntary or involuntary) to them (p. 61).

37. Into what classes do our ideas fall? They fall into those that refer to objects *external to us*, and those that refer to *ourselves*. How ideas of external things arise we shall have to consider later; the question as to whether a real outer world corresponds to them is answered by the Theory of Knowledge and by Metaphysics. But this much we may establish by simple self-observation, that we know of the psychical processes simply and immediately; but of what is outside us only by sense perception. But certainly, this distinction as to their source is not a primary one; the

ideas of colours, tones, and the like are at first classed with seeing, hearing, &c. The conviction that any idea is not merely an internal occurrence, comes from experience of all kinds which we accumulate by degrees; we must first have formed the idea of organs of sense, must have made the observation that the eye must be opened and turned towards the object that we wish to see, must finally have recognised the cause of the perception of light as something to be found outside ourselves.

Another difference is, on the contrary, early observable. The ideas of external things do not depend on our *will*; they change neither their place nor form, as we present them to ourselves in one way or another, here or there. Ideas, thoughts, feelings, and wishes we can voluntarily call forth and suppress in ourselves. Further, we remark that both classes of ideas, those of the external world and those relating to ourselves, form a *continuous* series. As we find in ourselves one state follows upon another, so also must any external thing go through a coherent series. We can perceive no object at one time here and at another there, unless it has gone through all the places lying between; a blossom does not become *fruit* without many very gradual transitions.

Another point, too, in which both classes of ideas are distinguished, is that a certain steadiness and constancy are peculiar to our ideas of the external world, whilst the purely psychical phenomena are conceived of as in a constant state of fluctuation.

One idea is alone an exception, namely, that of our *body*. This is because it stands on the margin of both classes. For whereas we contemplate the external

world as something extended in *space*, and on the other hand, all our internal ideas only under the schema of *time* (the reason of this will be shown later), our body, which we unconditionally consider as belonging to ourselves, fills a portion of space. Therefore in order quickly and surely to draw the line between what does, and what does not belong to us, we only require to feel our body or to cause it pain. That which we allow on this principle to be within the *body*, does not belong to the external world.

Finally, there is the distinction that all material changes in the external world are *movements*, whilst psychical events have nothing of this nature. Indeed, so different are both kinds of phenomena that we never come to a *knowledge* of the former. Certain vibrations of air produce certain colours in the eye, the will moves a body by means of the arm—but we cannot comprehend either the one or the other. For the physical *event*, as external, is entirely distinct from the processes which take place in ourselves.

38. What further distinctive marks have our 'internal' ideas? We have established the fact that all that we are and know is ideas. Let us now contemplate somewhat closer our 'inner' ideas, *i.e.* those which reflect ourselves internally. We saw (cf. Q. 35) that all psychical acts are *perceived* by us. With this perception is joined an immediate *judgment* of perception, by which we are convinced of its existence. Next, every idea is accompanied by a *feeling* of *pleasure* or *pain*; this feeling is not a kind of mere addition to the idea, but is, as it were, a quality of the idea itself. This 'tone' of sensation (to which we shall return later) is the reflex of our temporary complete state

at any given time in consciousness. Aristotle says (*Eth. Nic. X. 4*) that pleasure belongs to the activity which it accompanies, as maturity belongs to him who is in the bloom of life. In our opinion there is no state of man which is not accompanied by some feeling of pleasure or pain. We are, indeed, usually only accustomed to speak of this feeling, when, on the one side or the other, it attains to a certain *degree*. But as the healthy man has some consciousness of his organs (heart, stomach, head, &c.) when he does not *notice* them, because they perform their functions easily and with adequate strength, as little have we sensations, ideas, and thoughts without some tone accompanying them. Rest and freedom from pain are also feelings of pleasure; for absolute rest in the sense of inactivity, and complete freedom from pain in the sense of insensibility, do not exist.

But when Wundt observes on the other hand that there must be *indifferent* sensations, since pleasure and *pain* are *opposites*, which pass over from one to the other through a point of indifference, this point must in any case be *imperceptible*. For besides that our mental state always embraces several sensations simultaneously, most feelings are a *mixture* of pleasure and pain. This may be observed where the continued increase of a feeling of pleasure appears to degenerate into its contrary. Certainly light-stimulus, which at first was mild, gives pain by degrees, as it continually grows more dazzling; but this proceeds from the fact that the eye, which is too weak for many stimuli, feels *pain*, whilst our pleasure in the light itself in no way ceases. Only we have not accustomed ourselves to isolate each from the other. Also we for the most part

are too heedless of the fact that the sensation which one and the same idea excites in us, is different according as either the idea or the sensations that accompany it differ, and these differences arise in part from our total state, in part from the ideas allied with it. The same tone, the same colour, &c., gives us pleasure or pain according as it is connected with other tones, colours, and the like.

Finally, as a consequence of feelings there arise *desires*, i.e. states in which the idea of a non-existing object makes us uneasy. It is manifest that in this state both feeling and idea co-operate. No one can endeavour without setting an end before him, and that this is an idea is confirmed by experience; for whilst the thirsty man desires water, the ambitious man distinction, the avaricious man gold, each is determined by the idea of the pleasure which will accrue to him from the represented state of satiety, of honour, or of undisturbed possession. Thus it is not the respective external objects, but *the idea alone* that causes conation. But this idea must have existed in consciousness before it was desired. For he who cannot represent to himself the thirst-quenching power of water, the universal value of gold, will never desire either. In the moment when the object attained takes the place of the object desired, conation (unless other factors co-operate) ceases. But as long as conation lasts we feel ourselves altogether restless, restrained, and consequently ill-pleased.

So ideation, knowledge, sensation, and conation are constantly passing one into the other.

39. Do psychical acts form a unity? The multiplicity of ideas is undeniable; and it is true that our

condition may embrace most diverse elements; we perceive an external thing without desiring it, feel at the same time pleasure in the recollection of past satisfactions, and endeavour to put aside some unpleasant idea. In face of this relative independence which inheres in individual psychical acts, it may be asked whether there is one harmonious consciousness, *i.e.* whether we have to do with only a *collective number* of processes or with a *substantial* unity.

But in the first place the unity of consciousness declares itself *immediately* to all. Different as the ideas, feelings, &c. may be which we have at different times, we are instinctively—at least in *normal* states—convinced of this, that it is we ourselves who experienced those states. For the *content* of our consciousness may continually change, but the *form* remains the same. Further, consciousness differs from all hitherto mentioned phenomena (Qs. 33–38) in this, that it is not *capable of being recalled*, *i.e.* we can *never later* recall to memory the state which we speak of as conscious. But we do not *need* to do so, for consciousness as such is itself always *present*. It would be a contradiction in terms if that which is always present to consciousness, namely consciousness itself, should in certain cases have need of memory in order to be present to itself. Further, as relates to consciousness, we never remember it, but only its *degree* (*i.e.* its clearness). But if, like Fries, we regard consciousness only as a modification of *feeling*, it suffices to refer to the numerous cases in which the increase of *feeling* is accompanied by a *decrease* of consciousness, *e.g.* pain, anger, fear, and many similar states. Therefore the widespread confusion between feeling and consciousness is to be rejected. The only

intensification of consciousness consists in increase of *clearness* or *distinctness*.

For as light and darkness are only known to us by this, that in the former we can *distinguish* things, and not in the latter, so the essence of consciousness consists in *power of discrimination*.

Traces of this are found even in *unconscious* nature. The magnet distinguishes not only the two poles, but also distinguishes iron from every other material substance. Plant-life distinguishes between light and darkness, and between up and down. But while these lower creatures distinguish with *unfailing certainty*, the higher are exposed to *error* from the fact that they can represent to themselves a variety of states or things simultaneously. Thus the hen which sits upon a chalk egg is mistaken, the dung-fly (*musca vomitoria*) which sometimes lays its eggs on the stapelia, the moth which flies into the candle-flame. They are *deceived* by the presentation, *i.e.* the appearance to sense. These errors might be regarded as the unconscious reflex movements of machines (as, *e.g.*, coughing, swallowing, or the beating of the heart or shivering), were it not that they can be *corrected* by the creatures that commit them. The dog that does not let himself be deceived a second time by a counterfeit piece of meat, the birds which after a short time learn to despise scarecrows, have thus a variety of ideas which they at one time separate and at another unite. From this comes the capacity of the higher animals of *doubting* whether such or such a presentation really has an object corresponding to it. The more a creature can doubt, the more *conscious* it is. The *superiority* of the creature to its ideas indeed consists in this, that it can observe, compare, and examine

them. For doubt requires at least *two* ideas, and in addition to these a creature which transcends both, more particularly when both ideas have reference to the *future*.

Thus then it is obvious that the processes above described involve the *unity* of consciousness. For the *simultaneity* of different acts which are mutually independent, can be explained in no other way. One can indeed only desire that which is represented to one, and only so long as it is represented; but often a thing is represented for a long time without being desired. Then we see, hear, and taste at the same time quite *different* things. But this is impossible without *discrimination* and *comparison*; actions which must be evidently performed by the *same* creature which hears, sees, &c. For we can no more imagine desire, will, and action, without the unity of consciousness, than we can concepts, judgments, and arguments.

But if it be objected that in the assumption of such a real unity, the very varying closeness of the union between individual psychical processes is rendered inexplicable, we would answer that even in visible things a difference is seen in the way in which their properties inhere. In the same way the limbs of organisms show closeness of union together with relative independence, so that one member may be destroyed while the others continue to exist. In the same way, in the case of the various psychical manifestations, ideation, sensation, judging, conation, &c., are *organic members* of *one* and the same consciousness. This does not of course prevent consciousness from having different departments, and as it were different parts which undergo change, and of which one or another may wholly disappear. This con-

clusion is *confirmed*, not opposed, by the fact that, *e.g.*, the parts of a worm that has been cut in two retain the capacity of voluntary movement as well as of feeling and ideation. And as in this case, so in the case of man, one may regard a unity as constituted out of several separable parts.

40. What are the successive stages of consciousness? The foundation of consciousness, as we saw above (p. 71), is the *faculty of discrimination*. This is further made clear by the fact that we have always in consciousness two opposites, two worlds, namely *subject* and *object*. Each is quite distinct, nay divided from the other, and yet each presupposes the other as correlative. For although the external world appears to have an objective existence, an existence quite independent of us, yet it exists *as object*, *i.e.* as *arithmetical* to us, but this only by virtue of our subjectivity. And this subjectivity on the other hand would never come to light, never come into our consciousness, without an object. Thus, Schopenhauer was right when he said, *Consciousness*
 'there is no object without a subject.' The object *exists*
 presupposes the subject by which it is apprehended, but again the latter presupposes the former, because it finds itself in an object (the body) which, as a body among other bodies, is a part of the object-world. It is quite impossible to derive the one from the other, whether with the materialists we put object in the first place, or with the idealists give that place to subject. Their coexistence is a datum which must be simply acknowledged by consciousness at the outset.

But it soon *gets beyond* this stage. Besides the *passivity* which it exhibits in reference to sensations and ideas (presentations), it exhibits *activity* in bringing

about real changes in the external world—changes which take place within the realm of things, subject to conditions of space and time, and which are caused by feelings. This realisation of *ends*, i.e. of ideas of which the content is not yet, but shall be, manifestly *frees* the subject from dependence on the object, *ideally* at least: for actually and substantially the opposition of both still remains, and the subject's condition of dependence on the causal connection continues. At the same time the capacity of *doubting*, above mentioned (p. 71), which belongs to consciousness, is prominent here, and by means of it, the idea which corresponds best with the whole content of consciousness at any moment, is victorious over all others.

That soaring of consciousness above dependence on the object which has been already referred to, becomes complete when the Ego becomes developed in consciousness. The positing of the Ego involves the double assertion, 'I am a thing among other things,' and, 'I am I,' i.e. not non-Ego, but autonomous. It cannot be said simply that by this self-affirmation dependence on sense is *denied* (for this dependence henceforth takes place with concurrence of the Ego), rather it is through this self-affirmation that the dependence is *for the first time recognised* as what it is. As the light of truth illuminates at the same time both itself and error, so the Ego illuminates both itself and the non-Ego. It is only the enfranchised slave who estimates the horrors of slavery—he does not who was born and has grown old in bondage.

The freedom of the Ego grows in proportion as it *comprehends* both itself and the external world. The more it *assimilates* the latter by comprehension of it, the

more freely it can deal with things (*i.e.* the ideas of them) reproductively and productively. They all become its unself-conscious content, its objective consciousness, or its consciousness of a world which is made known by this consciousness itself. In other words, the object which we recognised above (p. 73), as the necessary *correlative* of the subject, was in truth from the first moment of our existence *our* work, the creation of *our* self-consciousness. But we first recognised it as such from the time that we consciously placed ourselves, as autonomous Ego, in opposition to it. That first dull stage of consciousness in which subject and object are found as *opposites* belongs both to *lower animals* and man; this higher one in which the Ego as a free creative power *raises* itself *above* the object, belongs to *man* alone. We are, of course, to be understood as refusing the fantastic exaggerations of J. G. Fichte, Schelling, and Hegel, who exalted human reason into the 'absolute' Ego. It is true that universality and reality belong to the Ego in a sense in which they do not belong to any other thing, but still it is and remains human, *i.e.* circumscribed—not creating nature, but only *re-creating* it by bringing it into *consciousness*. The unconscious is consequently presupposed in the Ego, but is not its *cause*. This must lie in itself, the Ego is *causa sui*, as we shall show later. This is confirmed even by the fact that *attention* (p. 61) makes every idea to which it is directed clear and distinct. Here too we remark (a fact that will be discussed more fully later), that our consciousness is no mere lifeless state; this it never is, but is *activity*, *self-affirmation*. *Reason* thus seeks to assert itself in all ideation, thought, and search which are directed to external

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objects; for without the nutriment which these afford it would have no continued existence, without the labour exercised upon these external objects it would have nothing to do. But consciousness asserts itself still more unmistakably as contrasted with the *content* thus appropriated. That ideas should be clear in themselves and distinguishable from one another is a mark of consciousness, or rather, to speak more accurately, this clearness and distinctness result from the *discriminating energy* of consciousness itself.

The power of *combining* possessed by the Ego stands even higher than this activity of discrimination. This power comes out in every conceivable *synthesis* by which it combines into a unity the manifold properties of objects, these properties having been abstracted from the objects before their combination. Hence it appears in every act of judgment and inference. Also in that *identification* of its subjective and objective consciousness whereby the Ego recognises all ideas of objects as *its own*, and knows itself in them. There yet remain the schemata of *space and time* in which all that happens takes place, which are the work of the Ego, or we may even say, apart from their metaphysical reality, the Ego itself. Space and time must in truth be regarded in and for themselves as the forms of occurrence; it is only our Ego which pictures them under the image of an immeasurable sphere or an infinite series. As opposed to its content in space and time, it constantly seeks to assert itself by taking that content into itself, accentuating the opposition between it and self, and then identifying it with self. Since it *thinks* things, it is itself each thing, and again each thing *is a form* of existence of the Ego. All this takes

place in the formation of *concepts*. For here the Ego recreates the external objective world. It *denies* what is merely particular and therefore defective in the idea of a thing, in order to affirm that which is its essential nature, that in it which is universal. Concept and idea are by no means the same thing. For *this* reflects the singular, *that* the universal; *this* what individual things have severally, *that* what they have in common; *this* changes continually in conformity with the temporary condition of the thing in question, *that* is unchangeable because it expresses form, the law in accordance with which a thing takes shape. In experience, ideas (presentations) come first, but regarded metaphysically concepts are higher than ideas. The material of the concept is indeed obtained by induction from without, but the origin of the concept must be sought in the nature of the Ego. By means of concepts the Ego arrives at *knowledge*, *i.e.* at a system of judgments which are true when they *agree* with that which is. Thus, as in immediate self-consciousness subject *identifies* itself with object, as in the formation of concepts it comprehends all things in accordance with what is identical in them, so in judgments it identifies its concepts with things. In proportion to the amount of material which we have taken up into consciousness and arranged in the framework of concepts and judgments, is the extent of the external world which has become subordinate to our reason. However much the objective being of things is still hidden from us, and may perhaps always remain hidden, we nevertheless theoretically and practically rule the world as soon as we have worked it up into unity for ourselves.

This is shown also by the *categories* which are now

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innate in every one who is born into the world. Each of us regards all things under the three categories of substance, cause, and end. Everywhere the question obtrudes itself, '*what is this?*' and however often we may have convinced ourselves that 'things-in-themselves' *do not really* exist, because they consist entirely of their attributes; yet in spite of this we contrast these as variable accidents with permanent substance. To this is closely allied the second category, that of causality. We wish not only to know *what* a thing is, but *why* and *how* it is as it is. Its nature is first truly understood when we know its antecedents. But our inquiry never stops here, nor at individual things. For this thing has its cause, and this cause has its cause, and that *its* cause, and so on in endless series. Thus we soon come to the first cause of all. The tendency to such inquiries has such deep foundations in man that even children always go back to the creation of the world. (Horace accuses bad poets of this tendency, and we may observe it in bad preachers in our day.) Natural science, as is well known, always inquires into the causes of things, and does not rest until it has shown the world to be an infinite unity embracing countless causes. Still philosophy is not satisfied with this. For besides inquiring for *causes*, we are always forced to ask for *ends*. We come across no thing, no fragment of a thing, but this question presses upon us. It is the end which more than aught else determines all conduct—conduct, which is the business of our lives. No one acts without an aim; this is for us as well-established a dogma as that nothing exists without a cause. Therefore whoever asserts that he is doing this *or that* without any aim, either lies, or jokes, or is mad.

This teleological consideration is so self-evident that we subject nature to it also. As science and art, morals and politics, have all demonstrable ends which may be pointed out, it is difficult for us not to presuppose the same in nature, especially as nature shows us in many ways purposive action. Only by supposing an ultimate all-pervading design can we explain the riddles which the origin and development of the world and of organisms set before us. History, morality, and religion all require us to presuppose an ultimate, all-embracing end of the universe.

Thus our consciousness everywhere impels to unity and generality. Even the materialist who in fact despises all speculation, teaches, in spite of his sixty-three elements, the oneness of matter. And the categories which we have just sketched out have evidently to do with one and the same thing which is looked at from these three points of view in turn. At first man regards everything as something inanimate, since material substance is what first strikes him. But as soon as he examines the properties of the thing he recognises them as its modes of operation, as phases in which it is both cause and effect, or either one of these in particular. But since the causal character of anything is regulated in conformity to law, and is in a relation of interdependence with the whole world, the apparently spontaneous activity of any object now takes on the character of a teleologic development in which the fundamental form is also the final cause.

Thus the Ego advances by continual *abstraction* towards unity, towards the principle of cosmic construction. But let us not deceive ourselves: the world in itself is quite untouched by all this; it is what it

was before our philosophical construction, an infinite life of innumerable individual beings. The world of which the man of science, the philosopher, the poet, and in short, every man speaks, is his own Ego. In this the unity and creative power of our consciousness is conspicuously shown. They go so far that not only do we make ourselves one with all that we as intellectual, social, and moral have experienced, but every creature pictures himself as the *centre of everything*; round him all men move, to himself he refers all that he sees and hears, before him bow down as before Joseph of old, sun, moon, and stars. And when we smile at the old Greeks who called Delphi the key-stone of the disc of the earth, above which was stretched the vault of heaven; if Israel appears to us presuming in regarding itself as the chosen people of God for whose sake the Almighty exalted or ruined all kingdoms of the earth—is there a jot of difference between us and them? To us our own country is the heart of Europe, the central land; all countries round it are more or less veiled in twilight; and again, in our country itself, that town which has the doubtful honour of being inhabited by ourselves shines forth pre-eminently; and in this place our littleness feels itself vividly, although silently, to be the central point. However ludicrous this self-delusion is, it is nevertheless deeply rooted in the nature of man. It is a necessary condition of his whole *existence*. Without it he would despair of life; he would neither know what to do with the countless ideas thronging in upon him, nor would it be possible for him to be happy. From this illusion alone comes his belief in his own freedom within the sphere of *mechanical causation*, from this alone comes his delight in

active effort, his self-esteem, his character as man, his life and conduct as a coherent, consistent whole.

41. What objections have been made to the unity of consciousness? Materialism formerly denied the unity of consciousness by regarding it rather as the total effect of life. This view lies also at the foundation of the Pythagorean conception of the soul as the 'harmony of the body' (cf. Q. 12), which view was energetically rejected by Plato (*Phaedo*, 92-96), and Aristotle (*De Anima*, I. 4). Later opinions are guilty of the same confusion, as, *e.g.*, when Schopenhauer speaks of self-consciousness as the focus of the collective activity of the brain, or when Czolbe speaks of it as a stream flowing in a circle, or Noack as a wave that maintains itself in a river, and many other similar opinions.

Among philosophers Herbart is the first who *explains* self-consciousness as an *illusion*. We have already (p. 45), pointed out the contradictions in his definition of the nature of the soul as simple and real. We will now consider his doctrine of the Ego. According to him the Ego is an obscure and constantly changing *point*, which is only presented to this extent, that innumerable series of ideas point to it as their common presupposition. We never find it as *bare knowledge* of ourselves in self-consciousness. For some particular determination always comes in; we find ourselves thinking, feeling, willing, and so on. In short, the Ego is never able to perceive itself. For (1) in no momentary perception do I find myself as an *individual*; rather *memory* must come to my help, and by its means I presuppose myself as known in every successive moment. Individual determinations are,

(2) only a continually increasing *aggregate*, by the observation of which, moreover, the Ego becomes constantly changed; (3) an aggregate does not possess unity, though we appear to ourselves to be a unity; (4) we are compelled to regard the character of Egoity as consisting solely in a relation between internal knowledge and some series of internal phenomena, and this being so, that character appears as incompatible with *anything contingent*, whether past or future. The Ego is thus an *illusive* idea which constantly fluctuates, it requires an *object* which must be distinguished from itself, and can, moreover, not regard as itself any object thus distinguished. The Ego rests consequently on a basis of multifarious objects, of which each part is unessential, so far that the other parts would support the Ego if this particular part were withdrawn from it. The complex of *signs* which in conformity with experience is built up from the perceptions of one's own body, from feelings of corporeal pleasure and pain, and ideas of external things which move about with the body—this complex becomes by reference to one's body the centre of all local distinctions.

Since consequently the Ego presents itself as self-presentative, and this self again as self-presentative, and so on in an infinite series, Herbart regards the Ego as presentation without an object presented, which is a manifest *circle*, and obliges one to acknowledge that the Ego is unknown to itself, that it possesses no idea of itself, and in consequence is *not* an Ego. For if we take the individual determinations away, nothing remains but their *empty place*. It is maintained that what the Ego *is* it must also *know*, that is its very meaning—what it does not *know* it *is* not; but it knows

itself only as an endless *series* of ideas. It is self-evident that Herbart's acceptance of an objective psychic reality (or Real) is in contradiction with this view.

C. Ludwig has next explained from a *physiological* point of view, that the unity of consciousness encounters insoluble difficulties because we can admit no real difference between the sensory and motor nerves, and therefore the difference in the result is inexplicable. But from the fact that we have as yet discovered no difference between the nerve-fibres, it does not follow that there is no difference; and what appears unimportant, physiologically, may perhaps condition great psychological differences.

But if, with Kant, we affirm the unity of consciousness and the plurality of psychical processes to be *phenomenal*, *i.e.* mere appearances, then all knowledge would be impossible. If *external* perceptions are only phenomenal (as Kant affirms), how can internal processes possibly be phenomenal too? The soul, according to Kant, cannot be known by speculative reason, for the inner sense represents us to consciousness only as we *appear* to ourselves, not as we are in ourselves. But even if our ideas, feelings, sensations, and conations may be rightly called 'phenomena,' still they are objects of self-perception, the certainty of which, taken with the above-mentioned (pp. 52, 53) precautions, is undoubted.

We therefore abide by the unity of consciousness.

§ 8. BRAIN AND SOUL.

42. In what relation to each other do physical and psychical phenomena stand? All thoughtful men of

science declare unanimously that they have not hitherto been able to derive psychological phenomena from the forces that rule in nature. Thus Wachsmuth says, 'that psychological phenomena have a very real *difference* of character as compared with other phenomena of life, has never yet been denied by any one. Whatever dispute there may be as to where the line is to be drawn between psychological and non-psychological functions, it is still *ridiculous* to speak generally of psychological phenomena, and yet to raise objections about the word "soul," a word which comprehends these phenomena. Hitherto,' says Wachsmuth further, 'we have not been in a position to demonstrate the connection between the brain and its normal function, in other words to exhibit psychological activity as the necessary result of the brain's functioning, and to point to psychological diseases as consequences of trophic or functional disturbances.'

Not to go back to older physiologists, such as *e.g.*, J. Müller, N. Wagner, Bischoff, Volkmann, and others, we find Ludwig asserting that the circumstances by the co-operation of which sensation arises, are still virtually unknown, but yet one must conclude that beyond the optic thalami and the mid-brain there must be *something* besides stimulated nerves in order that sensation may occur.

This is also the view of the distinguished mad-doctor Griesinger, who says 'the processes of ideation and volition are as little to be explained by reference to the organisation of the brain as sensation is.' Virchow also allows that we have as yet no methods of inquiry by which we can approach the process and the place of consciousness. 'Let us believe what we like,' says further A. Fick, 'as to the connection

between the spiritual and the corporeal, sensation or perception, regarded as such, is, and remains, an *immaterial* event. *Psychologically*, sensation appears as an elementary fact, as an ultimate phenomenon which, as an immediately given simple fact, serves as a means of explanation for further psychical phenomena. From the *physiological* side a proper explanation of them cannot be expected. Between the character of a sensation given by internal experience, and the mechanical character of any movement of material particles, whether ponderable or imponderable, and in whatever manner we choose to present them to ourselves—between these in themselves there is manifestly *no connection whatever*. Indeed Du Bois-Reymond goes so far as to maintain that even if we had what he calls ‘astronomical’ knowledge of the organ of the soul (with regard to which we have hitherto been altogether in the dark), mental processes would still be *just as incomprehensible* to us as they are now, for that we should still be face to face with something wholly *unmediated*. Astronomical knowledge of the brain would disclose to us only *matter in motion*, and between its movements and psychical facts no connection is demonstrable. It will therefore always be impossible to understand the higher mental processes by means of the mechanism of molecules of the brain, supposing it to be known, unless we could show how it could be other than a matter of *indifference* to a number of atoms, of carbon, hydrogen, carbonic acid, oxygen, &c., whether they lie, have lain, and will lie, this way or that.

43. What does materialism teach in opposition to these views? The materialists of our day, K. Vogt,

Büchner, Moleschott, and others, deny the existence of the soul with surprising positiveness contrasted with the modest judgments of physiologists. Regarding *life* as produced by combinations of matter, they take a similar view of psychical activity, and regard it as an effect produced by a plurality of material substances, the result of a peculiar arrangement of matter, a complex of many forces which have grown together into unity. Thought is explained as a mere motion or transformation of brain-substance; sensation as a relation between the sensory nerves and things; self-consciousness as merely a capacity of feeling the relationships of things to ourselves; and the will as nothing but the necessary expression of a state of brain, which state is conditioned by external influences.

But here a fact, undoubted in itself, is entirely falsified by partiality and exaggeration. For in the first place, it is undoubted that the soul, in whatever way we choose to represent its nature to ourselves, is present, so long as a man lives, nowhere else but in his *body*. So in the second place, it is an undoubted fact *that without the brain* no mental activity, no sensation, no thought or will, are possible. Thirdly and finally, our consciousness disappears in whole or in part as a result of disturbance or injury to the brain. A great injury to the brain, a great disturbance of it owing to a blow or fall, pressure on the exposed brain substance, a rush of blood or effusion—these may deprive a man of consciousness, sensation, and motion; excess of blood, and want of blood, alcohol, narcotics, and carbon monoxide, sleep, fever, and delirium may make us unconscious. But does it follow from this that all *mental activity* is produced *solely* by means of the brain?

Is even an appearance of justification to be found here for Vogt's well-known saying, that thoughts stand in somewhat the same relation to the brain as gall to the liver or urine to the kidneys? To the materialistic dogma, '*Because* substances are so combined, therefore mental activity is possible,' we oppose with equal authority this assertion, '*In order that* mental activity should be possible, substances are combined in the manner required.' The facts of mental disturbance above referred to prove merely that the soul is united to physical *conditions*, but not that it is an *effect* of them. X

Further, consciousness, in which the soul turns its attention to itself, is a phenomenon directly opposed to all physical processes. For here is to be found always, only motion outwards and change of place, whether vibration (oscillation and undulation), or rotation, or rectilinear motion. This being the case, it is impossible for consciousness to be the result of mechanical, chemical, and electrical motions. To assert this therefore, because a brain is necessary for thinking, would be just as well founded ('exact') as to say that Socrates sat in prison because his body had bones and muscles which made it possible for him to sit; whereas he remained there because, although unjustly condemned, he held it to be better to die than to evade the law. So the materialist continues in a general way to hold fast to the plurality of parts without seeking for unity; for him the phenomenon is primary, although its cause yet remains to seek. It is not then in the fact that he ascribes spiritual powers to matter that the untenableness of his theory lies, for the matter that is in connection with the central nervous

system has practically a power to think, just as matter generally has the power to attract and to repel; but it lies in the *superficiality* with which he ignores the true grounds of these facts.

44. What part is played by the nervous system? It is certain that the brain is pre-eminently the organ of the soul. But since it performs its functions only by reciprocal action with the whole organism, and since it is the central organ of the nervous system, we must now turn our attention for a little while to this. This system is concerned, as is well known, more or less directly in all organic processes, and the more perfect a being is, the more highly developed is his nervous system. In it the two distinguishing excellences of organised bodies, separation of different functions and united energy of the whole, are most apparent.

But here, too, what we have already (p. 83), said of the brain is of force, viz. that physiological experience promises very little explanation of the psychical processes which are mediated by the nerves.

We know very well that it is only by the mediation of the nerves that sense-perception, ideas, feeling, and thought are brought about, and further that our will sets the body and external things in motion only by means of the nerves. And these themselves again depend on the external world so far that it is from it that they receive their stimuli, namely mechanical, chemical, and electrical influences. But at this point obscurity begins; for physiology does not know how to explain what it is that occurs when a nerve is 'stimulated.'

'The nerves,' says Ludwig, 'as long as they are in a *state of living activity*, develop spontaneous force,

capable of acting from within outwards. At no time in perfect equilibrium, they are constantly crossed by electric currents, when continuously in a state of (1) so-called rest (this is not perfect rest—a state which does not actually exist), or (2) of excitation, they undergo chemical and mechanical change. In excitation the liberated motion only takes a different *direction* from that which it takes in so-called rest, and by this it works upon the muscles, glands, &c. The *sources* of their force are to be sought for probably in the *metabolism* of the matter which they contain, and the forces which are liberated by the chemical processes are probably *electrical*. For since no change of bulk takes place in the chemical transformation of matter, and since also the nerve develops neither in the state of *excitability* (rest) nor in that of *excitation*, any demonstrable traces of warmth, therefore the analogy of chemical experience only allows the conclusion that the nervous forces are nothing but *electrical*.' Du Bois-Reymond expresses himself with equal reserve when he states, as certain results, only the following propositions: 'In all parts of the nervous system of all animals *electric* currents flow; this is the case for all the muscles of all animals; these currents experience certain changes when the processes (1) of motor and sensory impulses in the nerves, (2) of contraction in the muscles, take place.' What has hitherto been ascertained in regard to these *changes* is comprised by A. Fick in the statement that the electro-motor activity of the *afferent* nerves in *active* (*i.e.* excited) conditions is less than in a condition of *repose*, and that the nervous current (*i.e.* the electric current that circulates in the nerves) experiences a *negative* fluctuation in the transition into an active condition, without

however changing its direction. According to this view we know only that in *excitation* of the nerves certain changes show themselves in the electric nervous currents, but upon what this excitation itself rests, and in what relation it stands to *sensation*, is unknown to us. The theory of knowledge teaches us that our sensations are the result of the reciprocal action between objective (physical) phenomena, and subjective (physiological) perceptions. The senses, it is true, do *not deceive* us (at least when in normal condition), but the deception lies in a false inference; and they only give us signs of the physical processes, which signs we have to interpret. For between these and our sensations there exists absolutely no relationship or analogy. Physically regarded, *e.g.*, no tones or colours exist, but only undulations of the atoms of air and ether, of different rapidity, size, and direction. Psychologically, on the contrary, we perceive insubstantial stimuli which at one time (in tones), appear as waves of a certain duration, at another time (in colours), as motionless surfaces. Similarly with smell and taste, when we conceive chemical (*i.e.* mechanical) motions of atoms as motionless properties of things. Further, the *quality* of the sensation does not depend on that of the object, but on the nerve that is affected. For we perceive the same oscillation of the ether—the sun's rays—by the *eye* as light, by the *skin* as heat; the same electric current by the *eye* as a spark, in the *ear* as a crackling, in the *nose* as a peculiar odour, on the *tongue* as a taste, and upon the *skin* as a painful feeling of heat. But should a materialist object, that sensation is nothing but a determinate molecular motion in the brain, the *question would not thereby become more distinct*. For

this only means that every sensation is necessarily united to a determinate material process in the brain. Both are *distinct* although *inseparable* sides of the same thing. But to explain the psychical process of sensation by the physiological is so much the *less* to be expected, because the process of excitation in all nervous elements, more particularly in all nerve-fibres, is really *the same* whether the fibre be in the brain, in the spinal cord, or in a peripheral nerve-trunk. Thus the so-called specific energies of the senses arise only from their different positions in the central organ. Add to this that *the same* excitations of the nerves arouse *different* sensations in different persons, and that a man in a dream, in drunkenness, or mentally disordered, has ideas and sensations without the corresponding nerve-stimuli, as dream-pictures, visions, hallucinations, and the like.

45. Of what elements do the nerves consist? The nervous system is compounded of three fundamental elements, differing in form and structure; (1) the nerve-cells; (2) the nerve-fibres; and (3) a delicate retiform connective tissue, termed Neuroglia. The *nerve-cells* appear as round or polygonous corpuscles of protoplasm of very different sizes. The most important part of the *nerve-fibres* is the axis-cylinder, which again is compounded of primitive fibrillæ. The nerve-cells are not merely bunches of fibres, but rather independent points of departure from which the fibres start.

The *chemical* constituents are the as yet little investigated substances—lecithin, cerebrin, and cholesterin, with which we also find particles of albumen. But as to their physiological connection and their distribution in the nerve elements, we only know that in the fibres

as well as in the ganglia, albuminous matter is the chief constituent. It is assumed that the nerve-cells of the brain and of the spinal cord form a system of central points, which are connected in a most complex way, and upon which, moreover, determinate groups depend, as well as the elementary peripheral organs (muscles, glands, and sensory surfaces). The nerve-cells and fibres form a net, in the centre of which the brain and spinal cord are placed.

46. What are the different divisions of the nervous system? We can distinguish three main divisions, namely, (1) the sympathetic system, (2) the spinal system, and (3) the brain.

(1) The system which ramifies in the interior of the trunk has its origin in the *nervus sympathicus*. This runs to the anterior aspect of the spine, and is connected with its nerve-substance at different points. By means of it the vegetative activity of the organism (in heart, liver, kidneys, and intestines) is regulated.

(2) The system of the spinal cord, which is excited partly by physical, partly by psychical stimuli, has to maintain both the general tone (contraction) of the muscles and the so-called reflex motions, as well as to transmit the efferent impulses proceeding from the brain. Thus it occupies an intermediate position between the sympathetic system and the brain.

(3) In the skull, which may be regarded as an expanded vertebra, is found the brain, which takes part in all processes of common sensation, muscular actions, secretion, feeling, as well as in the special sensations of light, sound, smell, taste. Its chemical composition is as follows: albumen, lactic acid, phosphoric acid, *with traces of* sulphates and chlorides of the alkalis in

solution; besides the walls of the vessels and nerve-fibres, insoluble albuminous bodies, glycono-phosphoric acid, cerebrie acid, cholin-stearin, oleine, margarine, iron, silicic acid, phosphate of lime, and phosphate of mica.

Through the brain we perceive not only all external stimuli (directly, and through the periphery), but psychological phenomena and manifestations are also mediated by it. For in it all peripheral stimuli first become matter of sensation, and from it proceeds every idea, sensation, or conation which sets the body in motion.

Further, in these three systems we distinguish the *grey* and the *white* matter. The former constitutes the nerve-cells (ganglia), the latter the fibres. The former serve to keep up the nerve-matter, the latter transmit individual stimuli.

A further important distinction concerns the *nerve-fibres* more particularly. Their office is to carry on the excitation communicated to them, and thereby to excite *either* the contractility of the muscles *or* the sensibility of the ganglionic centres.

If a nerve-fibre connects a *muscle* with a ganglion, it conducts the stimulus *centrifugally* (i.e. outwardly), and it ends with a motion; if, on the other hand, it connects a sensory *part of the skin* with a nerve-centre, the movement is *centripetal* (i.e. inward), and calls forth a sensation. The former are called *motor*, the latter *sensory* nerves. The nerves spring from the spinal cord in two rows, an anterior and a posterior. The former are *sensory*—their stimulation produces pain, if they are divided the parts of the skin to which they are distributed become insensible; the anterior nerves are *motor*—their stimulation causes contraction of the muscles if

they suffer lesion, paralysis of the muscles ensues. It follows from the so-called 'Bell's theory,' that at the points of origin of the nerves, the paths of the sensory and of the motor nerves are entirely *distinct*. In the case of the *cerebral nerves* this distinction is for the most part kept up throughout their whole course. In the *spinal cord* the motor and sensory paths partly cross, and the grey substance surrounding the central canal is able to conduct stimuli of each kind in every direction. This fact is confirmed by the disturbances of transmission which result from partial lesion of the spinal marrow, and further by the effect which such lesion has in influencing reflex movements and changing the sensibility of the grey substance. Movements are performed in both directions (outward and inward) with great, although measurable velocity. According to Helmholtz the rate of impulse in a frog is about 32 yards per second, and in man about 107 yards per second. So that a hurt, *e.g.*, to the finger tip, would need about $\frac{1}{107}$ second to reach the brain. For the rest, the nerve-stimulus does not become sensation immediately when it reaches the brain, but from $\frac{1}{10}$ to $\frac{1}{20}$ of a second later. It follows from this, (1) that sensation takes place only in the brain; (2) sensation and nerve-stimulus are not the same; (3) the transformation of a nerve stimulation into a sensation (which occupies a measurable time) must be caused by a psychical (non-physiological) force.

In proof of this may be cited the remarkable fact that the *motor* nerve-fibres in their course through the brain have nerve connections which are such as to enable them to inhibit the excitation of nerves independently stimulated. By this means it is also possible

for the directive psychic force to check voluntary motions at every moment. Since further all nerve-fibres are throughout similar in form and substance, the motor being only somewhat stronger, their different activity must proceed from some force acting in them which is not identical with nerve-force.

47. How far is the brain the organ of the soul? All parties agree in this, that the brain is the *central organ* of the nervous system. As the latter is already centralised in the *ganglia* which are connected by the nerve-fibres, and again throughout the branchings of the *sympathetic system*, and finally in the cerebro-spinal system, so it has its central organ *par excellence* in the brain. Here *two* principal parts can be distinguished; the *cerebellum*, which is connected with the spinal cord by the medulla oblongata, and which is sensitive to stimuli, and the *cerebral hemispheres*, which are insensible to stimuli. The former resembles the spinal cord, having, like it, the function of lateral and longitudinal transmission; the latter, on the other hand, are in an especial manner the organ of the mind.

Both *hemispheres* have not identical functions, *i.e.*, they do not exist in duplicate solely in order that one may be able to do the work of the other; but as in the case of the eyes, the corpora quadrigemina, &c., their bilateral position is accounted for by the whole bodily structure. Each hemisphere serves that half of the body which lies opposite to it, the nervous channels which terminate in the one hemisphere running *directly across* those which terminate in the other. The *motor* channels of direction end in the front part of the cortex of the brain, the *sensory* in the back part of it. Each motor and each sensory tract of the body is

pecially and indeed *repeatedly* represented in the brain.

In former times the individual mental faculties were arbitrarily *localised* in the brain. The physician Haller, also known as a poet, was the first to distribute the capacities of sensation and motion to different tissues, namely the nerves and muscles. According to him the brain is in connection with the mind only in so far as it is the common stage of both phenomena (*sensorium commune*). Even although each nerve receive its physiological properties from a determinate central part, still its seat extends over the greater part of the brain. Gall, who was the first in describing the anatomy of the brain to proceed from the base upwards, and pointed out the generally fibrous composition of the brain-substance throughout, carried out the localisation of faculties above referred to systematically in his *Phrenology*. He proceeded from the idea that the brain consists of internal organs which are analogous to the external organs of sense. He held that the former should mediate our knowledge of mental life, as the latter mediate that of the external world. And in fact he distinguished twenty-seven of such internal organs, which he in a somewhat arbitrary fashion designated as sense, instinct, talent, or even as memory; still the ordinary mental faculties (understanding, reason, will, &c.,) are not found among them, for these are not localised but are equally operative in all organs of the brain, and of the soul itself. But a fundamental error of this 'cranioscopy' is the substitution of the *skull* for the brain. It is assumed that the development of the latter will always be manifested in *the former*. Further, we must see that this is cer-

tainly a step backwards from Haller, in that the brain is made a complex of organs independent of the body. Then, too, the numerous cases of injury to the brain which have been examined with a view to this theory have *not* confirmed it. But it is more especially contradicted by the psychological examination of the twenty-seven (or thirty-five) 'senses,' which are all together very complicated and deducible from one another; how then can they dwell in definite 'nerve-bundles'? Moreover, it follows that in fact each 'mental organ' is in itself a miniature personality or soul; thinks, feels, and wills on its own account. But how many psychical and physical forces co-operate in every 'individual sense,' such as pity, fear, joy, remorse, sexual instinct, love of one's children, &c. But if a phrenologist replies that in fact all our actions are the result of 'senses' taken all together, then we have a kind of parliament of miniature persons, in which the majority must always win, on one side or the other. Instead therefore of analysing the soul (or the brain) into its *elements*, we are given a number of personal beings which are even more unexplained, or rather more obscure, than the *one* human personality. We agree, therefore, with Johannes Müller when he says, that there is in general no *à priori* objection to the principle of phrenology, but that it has throughout no experimental basis.

As Gall localised psychical centres in the brain, so Pflüger localised them in the spinal cord. From the fact that decapitated frogs and amputated tails of lizards make purposive (reflex) motions—thus a decapitated frog wiped acid from its back first with one foot, and then, when this was cut off, with the other—

Pflüger concluded that there are souls in the spinal cord. But apart from personification, Pflüger here concludes falsely because he assumes too much. For those movements of the decapitated frog are not only just as purposive as if it had consciousness and will, but are supposed to be even more purposively performed than a man could perform them. Neither man nor frog needs, in order to react to pain or stimulus, any precise idea, any touching or seeing of the respective parts. In the case of the frog referred to, very accurate mechanism operates in response to the stimulus, and without consciousness, exactly as in the case of manifestations of human will (p. 64). We see that the amputated frog lacks precisely the distinguishing characteristic of consciousness—unity and connection (p. 70); for when this animal has accomplished the one defensive movement, it remains apathetic for hours together, until it is stimulated afresh. Again, the experiment made on two frogs, of which the one is decapitated, by placing both in water which is being gradually heated, proves that the decapitated one has no consciousness, for only the uninjured one attempts to escape from being boiled.

Magendie, too, who carefully examined the brain-centres, localised certain powers too precipitately, for when he saw animals fly forwards after the destruction of the corpora striata, he assumed the existence in these of a power of checking motion forwards. Also, according to him, a power of inciting forward movement was supposed to reside in the cerebellum, and circus movements in injuries of the cerebellar peduncle were attributed to disturbance of the normal equilibrium between the forces acting right and left respectively. But if

a series of purposive movements correspondent to the impression take place in such a case, yet this automatic regulation of movements differs only in degree from the reflex movements of the spinal cord. For the animals which possess only corpora quadrigemina and optic thalami behave like decapitated ones; they only move in consequence of response to external stimulation. A pigeon whose cerebral hemispheres have been removed, a frog whose cerebrum has been separated from the corpora quadrigemina, remain all day long sitting in the same place. All spontaneous movement as well as all reproduction of former sensations has ceased, so that there must be a total absence of *consciousness*.

Thus too the view of Flourens, who in other respects is so meritorious, is refuted, for, according to it, the smallest parts of the cerebellum and corpora quadrigemina can take the place of and perform the functions of the whole, since intelligence and will must, it is supposed, exist equally in every part. His observations always deserve full consideration, although they need some limitation. He thinks he has demonstrated that with the gradual destruction of the cerebellum an animal loses its equilibrium, until on its complete destruction it can no longer run *with regularity*, while the capacity for incomplete movements still remains. Equilibrium and regularity of motion are consequently supposed to depend on the cerebellum, but the *production* of the motion itself on the spinal cord. Voluntary motions are caused in the cerebrum by psychical activity (the will). For if one hemisphere be first destroyed, the animal loses in fact only sight, and that too at the opposite side of the head, but 'intelligence' itself remains; but should *both* hemispheres be

destroyed the animal no longer sees or hears, it loses all its instincts, is no longer able to defend itself, to fly, or to eat. All perceptions, all will, all spontaneous movement cease. On the other hand the capacity for and regularity of movement remains, and even *sensation*; the animal sees but no longer *perceives*. For objects are reflected on the retina, the iris remains contractile, the optic nerve is affected, still the *animal* sees nothing. Thus the vital force in general is preserved, the intellectual or psychical force on the contrary is destroyed.

R. Wagner agrees with the French investigator just referred to in this, that he does not regard the *cerebellum* as a central organ for general sensibility, nor as divided with reference to the higher perceptions of sense. Animals and men with a completely or partially destroyed *cerebellum* feel, taste, smell, &c. Further, ideas, sensations, and acts of will occur without it. There is therefore a purely *motor* organ for the muscular apparatus both animal and vegetative, *e.g.*, for the regulation of symmetrical bodily movements, although it cannot be called the seat of a 'principle of motion.'

As for the *cerebrum*, all physiologists are agreed that it is the organ of purely psychical phenomena. Certainly injuries to the cerebral lobes which are locally *restricted* lead to no perceptible changes of function. During its removal layer by layer, animals neither evince pain nor attempt movement; it is true that at last they become awkward and stupid, still this change usually disappears soon. A pigeon which has had the whole of *one* of its cerebral lobes removed (or a considerable part of both) is after some weeks not to be distinguished from an uninjured one. But the more *perfect* the brain is the more important are the conse-

quences of such injuries. In *man* they lead to disturbance in *voluntary* motion, sometimes too to disturbance in sense-perception. Since, however, the intelligence does not appear to be disturbed by the total destruction of *one* cerebral lobe, it would appear that one hemisphere can very well *do the work* of the other.

When *both* hemispheres are *entirely* destroyed birds and rabbits remain standing or sitting upright, but do not voluntarily leave their place or take nourishment. Still they can be kept alive for months. *Intelligence* and *will* are both destroyed. In *man* extensive injury of the cerebral lobes is always followed by mental depression, as mental disorder is followed by a change in the cortex of the cerebrum.

This, the *cortex of the cerebrum*, has evidently the greatest importance in psychical acts, whether we have more particular regard to the *cortical layer*, the *convolutions* or the *corpora striata*. From this layer *voluntary* motions proceed, though at the same time they are carried into effect by the organs concerned in reflex movements. So the structure of the cerebellum appears to bring about the correspondence between voluntary impulses and sense-impressions, whilst the ganglia of the *crura cerebri* serve for the purposive connection of the paths of conduction. Thus the will employs a complicated, self-regulating *mechanism*. Still in every case the impulse to begin or to cease a movement proceeds from the will itself, as also the apprehension of sense-impressions and of reproduced ideas. But although the association and reproduction of ideas as well as the excitation and determination of the will are subject to certain physiological and psychical laws, still the *freedom* of the will is not thereby abolished, as we

shall fully show hereafter. Yet the fact that ideas are associated and reproduced in accordance with physiological laws of nervous mechanism, in no way excludes their psychological interaction; again, although action is bound up with nervous excitation and muscular contractions, still the spontaneous activity of the will remains.

In truth there are *three* points which must not be overlooked, and which are often not duly considered in anatomical experiments: (1) An animal that is subjected to vivisection is not in a healthy state; the disturbances in its consciousness, feeling, &c., which the anatomist observes after the destruction of a larger or smaller part of its brain, certainly proceed in part from the abnormal condition in which the cruel torture has placed it. (2) In comparative anatomy we are not satisfied for the most part with comparing the visible organs of animal and of man, but form conclusions as to their relative mental functions without considering that we know almost nothing at all about those of animals. (3) Especially we should not insist on holding fast the doctrine of precisely defined *abstract faculties* (as set forth by certain psychologists), in order that we may be able to assign them to this or that part of the brain. This localisation was Gall's *mistake* (p. 96). We have observed, in opposition to him, that 'pity' is a much too complicated state of the whole man to be confined to any particular part of the brain, and the same is also the case with thinking, willing, and feeling. These are not 'located' before or behind, above or below in the brain, but are conditions of the soul.

Moreover, we find that in animate creatures intelligence appears to increase in proportion to the *size* and

amount of convolution of the cerebral hemispheres, both these conditions again depending on the *size* of the animal in question. In larger animals the hemispheres are *absolutely* larger, in smaller animals *relatively* larger (*i.e.* larger in proportion to the weight of the body), and the *convolutions* of the surface increase with the size of the brain; all very large animals, therefore, have convoluted cerebral lobes, and the very small ones smooth cerebral lobes. The degree of *organisation* too is of importance. Among land-mammals the insectivora have the fewest convolutions, then follow the carnivora, and last the herbivora; the brains of the sea-mammals are more richly convoluted than those of the herbivora. Accordingly comparison is only really of value when it is made between animals of cognate organisation and bulk, as between species of dogs, or between apes and men, or between men themselves. According to Huschke the average *weight* of a man's brain between the ages of thirty and forty is about $49\frac{1}{2}$ oz., of a woman's brain about $\frac{1}{6}$ less. In the lower races of men the brain appears to be smaller and less convoluted. H. Wagner estimated the surface of a man's brain to be about $1\frac{1}{2}$ square feet, of an ourang's, about a quarter of that extent.

This much at any rate appears to be established, that highly *gifted* men possess large and much-convoluted hemispheres. At the same time other factors, such as race, sex, age, bodily size, convolution of the brain, have to be taken into account. Further, with an increasing preponderance in the *fore-brain* there is always found at the same time greater richness in convolutions and an unsymmetrical formation of its two halves. Thus H. Wagner found that in the mathe-

matician Gauss the frontal lobes were 40·8 per cent. of the total surface of the brain, in an artisan only 38·8. The pathological changes of structure which accompany paralytic imbecility also appear in the *frontal lobes*.

At least for *one* group of movements—speech—a certain part of the fore part of the brain has been established as the organ. *Aphasia*, i.e. the stoppage or disturbance of the power of speech, depends on pathological changes in Broca's convolution, which is adjacent to the fissure of Sylvius, and occupies the lower part of the frontal convolutions, and also a small part of the ascending parietal convolution. A man may either lose the capability of giving to a notion its vocal expression, or may confuse different words one with another. Wundt conjectures, therefore, that there are *two kinds* of speech-centres—one in which the innervation of the word appropriate to any idea is due to the corresponding sensory stimulations, and *the other* in which the innervation of any word brings into action those combined motor stimulations which immediately produce articulate speech. Any functional derangement of the first centre would induce loss of the memory of words (*amnemonia*), that of the second would cause the use of wrong words (*ataxy*). The two centres cannot, however, be separated *anatomically*.

We conclude this survey with the *four principles* which the same inquirer laid down concerning the physiological nature of *all* nerves.

(1) The relation of *elementary parts*: Every nerve-element is connected with other nerve-elements, and is first fitted for physiological functions by this relationship.

(2) *The indifference* of function: No portion of

nerve-matter is endowed with definite functions, the nature of its performance being dependent on its connections and relationships.

(3) Principle of *substitution*: Other portions of nerve matter take the place of those whose function is deranged or stopped, so long as these others are connected in the way required.

(4) *The localisation of function*: Each determinate function has a determinate place in the central organ from which it proceeds, *i.e.* the constituents of which are properly related for the performance of the function.

48. What is understood by the seat of the soul? Before we answer the question as to the *substance* of the soul, we have to examine the physiological problem as to where the soul is really seated, *i.e.* in what part of the brain the stimulus receives the form of idea and sensation. This question is evidently neither a psychological nor a metaphysical one, for empirically known psychological states can as little give us knowledge of it as can deductive conclusions from such psychological data.

The conclusions we have already arrived at have shown us that we cannot expect to find out any determinate place in the body or in the brain as the seat of the soul. For even if at times, when we think hard, our head aches, we must yet guard ourselves from confounding the sensation—which, indeed, is not where it appears to be—with its cause. Localisation is, as we have seen (cf. Q. 47), too hazardous. We can, however, only answer the question finally when we have (cf. § 9) exhibited our conception of the substance of the soul. We will therefore only give here an *historical* survey of the answers to our question.

With Homer the $\psi\upsilon\chi\acute{\eta}$ is only the vital force personified, an ethereal body in a material body, separable from the latter and existing as a shadowy form ($\epsilon\acute{\iota}\delta\omega\lambda\omicron\nu$), a figure in a dream, or a column of smoke (*Odyssey*, 10, 495. 11, 222); the visible body is the real man (*Iliad*, 1, 4. 23, 65). As soon therefore as the shades in Hades have drunk *blood*, consciousness returns again to them (*Od.* 10, 494. 11, 220), so that they again feel pleasure, pain, love, and hatred. According to the *Old Testament* too, the soul is in the blood (therefore the use of blood as food was forbidden), and it ascribes the functions of the soul to the heart, and at times to the intestines, the limbs, the liver, the gall, or the kidneys. In the Scriptures, after the Captivity, the soul is transferred to the head (*Dan.* ii. 28, iv. 2. On the other hand, see *Dan.* ii. 30).

With the Indians the most important part of the soul (*Kutasta*) resides in the heart, the faculty of thought in the head, whilst the sensual part of the soul is in the breast and intestines, just as at this day the different parts are similarly localised by the Ethiopians, Greenlanders, Caribbeans, and Japanese. The Siamese transfer the soul to the crown of the head as being the highest point. The Chinese distinguish between the sensitive soul, the vital force, and thought; the latter resides in the head; on the other hand the Persians localise anger there, and the thoughts in the heart, sensual desires in the liver. As regards the Egyptians opinions may vary, for they sometimes declare the head, sometimes the heart, and sometimes even the blood, to be the seat of the soul.

The Pythagoreans, it is said first combined the *three souls* ($\psi\upsilon\chi\acute{\eta}$, $\theta\upsilon\mu\acute{o}s$, $\nu\omicron\upsilon\varsigma$) in one; Pythagoras

forbade the use of the brains and hearts of animals as food, because he placed *νοῦς* in the brain and *θυμός* in the heart. At any rate Alcmaeon, who has been often called the founder of the doctrine of immortality, was the first to assert the connection of all organs of sense with the brain. The physician Hippocrates places the soul there, while Democritus in spite of his assigning thought to the brain, anger (*θυμός*) to the heart, and sense to the liver, still allows the soul to pervade the whole body. Plato, who agreed with the threefold division of the Pythagoreans, localised thought (*νοῦς*) in the 'acropolis of the body,' i.e. the skull, anger in the breast, sensual desire in the abdomen.

It was quite otherwise with Aristotle. With the rejection of the Platonic division of the soul, he placed the sensitive and conserving vital force in the *heart*, which is in the central point of the body. Although Aristotle knew the superiority of the human brain to the animal brain, as well as of a man's brain to a woman's (*De Part. An.*, 2, 9), still he did not believe the brain to be the seat of sensation on account of its insensibility to touch; also it is the coldest, the dirtiest, and the dampest part of the body. In agreement with the Stagirite, the Stoics and Epicureans placed thought in the breast, whilst the physicians Herophilus and Galen again assigned it to the brain; Xenocrates placed the reasoning soul in the crown of the head, Strato between the eyebrows (Tertullian, *De An.*, 15). The Neo-Platonists asserted in opposition to these views that the soul is wholly in the whole body, and wholly in each of its parts.

In the *Middle Ages* Plato's influence was at first predominant, afterwards Aristotle's. Nemesius, who sought

to reconcile both, transferred imagination to the lateral ventricle, understanding to the aqueduct of Sylvius and third ventricle, and memory to the fourth ventricle of the brain; Augustine even designated the brain as the central organ of sensation and of voluntary motion (*De Gen. ad Litt.* VII., 17). The Schoolmen maintained the two fundamental formulas: (1) that the soul is somewhere in the body, but is neither corporeal nor local; (2) that it is wholly in the whole body and at the same time wholly in each of its parts.

Descartes, as a consequence of his strict dualism, regarded the pineal gland which has no duplicate as the seat of the soul (*Passions de l'âme*, I. 31); following him, Bonnet preferred to assign the seat of the soul to the corpus callosum cerebri, Digby to the septum lucidum, Haller to the pons Varolii, Boerhave to the medulla oblongata, Plattner to the corpora quadrigemina, and Sömmering called the cerebral spinal fluid the 'waters over which the Spirit of the Lord moves.' Leibnitz, on the other hand, who denied 'influxus physicus,' says that the ubication of the soul is definitive, *i.e.* its place is a mere point.

Since Kant expressed himself in part hesitatingly in part evasively on the whole question (for according to him we can attribute to the soul neither a local nor a virtual presence in the body), the Neo-Platonic view again became prevalent, only that the brain was indicated as the exclusive organ. This is the conclusion of Johannes Müller (*Physiologie*, ii. 50), further of Steffens, C. G. Carus, Reichlin-Meldegg, Burdach, Fischer, and J. H. Fichte. The last-named, who regards the body as a spontaneous production of the soul, attributes to it, as to the true, inner, invisible body, dynamical omni-

presence in the body. Thus he comes back to the Homeric idea to which the 'physical soul' of Aristotle offers an analogy, and which was propagated by means of Neo-Platonism, the Cabala, and Christian mysticism. Thus Paracelsus speaks of a sidereal or astral body, the younger Helmont of an *archeus*, i.e. central spirit; in later times Krause speaks of a primal body, and Fischer of an indwelling of the soul throughout the body. According to J. H. Fichte then, it *brings about* the expansion of its body—just as when it overcomes (since it is soul) the separating force of this expanded existence—for every real being produces its own space. It is thus not to be thought of as localised in any part of the body, although it may possibly chiefly reside in the nervous system, for it has its 'seat' wherever it *operates*.

For Hegel and his school the whole question had no significance, for the category of space does not in any way exist for the soul as a subjective spirit; the spirit is throughout the whole organism everywhere centre and everywhere periphery; what is in the brain is never the soul itself, for the soul is only subject, it is everywhere and at all times, and so on. Herbart, who regards the nature of the soul as quite unknowable, still designates it as a simple Real which does not change and which only has changing ideas by contingent connections with other Reals. Although it neither is substance nor is in time or space, he yet ascribes to it a 'changing seat'; and he is even not disinclined to seek this in the brain. Schopenhauer, whose psychology has many points of contact with that of Herbart, sees in the brain the objective presentation of the intellect, in the total organism that of the will, and

he considers that the will is most immediately objectivised in the blood.

An interesting attempt is that of Huschke to represent the central organ as an electric machine. 'As kidneys, stomach, and muscles have,' he says, 'their chemico-electrical processes, *i.e.* secretion, digestion, contraction, so the brain too produces its peculiar nerve-electricity.' A galvanic battery has (1) two poles, (2) closing wires, (3) moist conductors, from the co-operation of which the electro-motor process develops itself. The two hemispheres are the colossal pair of *discs*, ganglionic bodies of which the one perhaps is positively electrical, the other negatively. The *moist conductor* is the commissural system, any injury to which causes imbecility or one-sided movement, either backwards or forwards or in a circle. In the convoluted part is found the *axis* of the pole, while the mechanical *closing wires* are represented by the continually repeated crossing of the fibres. A sort of oxidation causes the electro-motor process; for nutrition is most marked in the brain, the white medullary substance contains especially fat, the grey substance, water and pigment (it has more carbon and oxygen than fat and water). In the *cerebellum* too, in which the vermiform process, hemispheres, middle and superior peduncles are distinguishable, it has been attempted to point out the analogy with a galvanic battery. All this is of course only meant *analogically*.

~~Lotze~~, who again agrees more with Herbart, regards the soul as an immaterial substance, which in truth fills no space while yet it, from some definite place, moves the neighbouring particles of matter. Here Lotze gives in his adhesion to Occasionalism (cf. Q. 15);

the real substances which compose the body (which are quite distinct from those of the soul) only give the latter occasion to act; matter is merely the shadow, the form of appearance, of that which is in itself a super-sensuous Real. We see then that he regards the soul as a Real essentially and permanently unique; though not (as Herbart holds), quite immutable, its ideational life is, for Lotze, not the mere result or echo of physical life, the stimuli of which, in his view, it elaborates independently. The body furnishes both the instrument of the soul and also the limit which bounds the ever-present capacity of souls for acting on one another. Lotze considers it, strange to say, *not* necessary that all the guiding threads of the nerves should be brought together into *one* point, where the soul is; on the contrary it is sufficient if they 'all debouch in one *nervous parenchyme* which opposes no *resistance* to expansion on all sides, and therefore allows of at least a part of their activity certainly affecting the substance of the soul.' He does not see the place of the soul in the grey substance, but in the *pons Varolii*; still the soul, moveable in its abode, can hasten to meet the different impressions, so that it can receive in their due place and position (namely at the central terminations of the fibres each time excited), the impressions there presented to it. Since, however, in order to 'hasten to' a stimulated nerve-end, the soul must have previous knowledge of its stimulation, Lotze assumes further 'some kind of dynamic connection by reciprocity of action,' with that nerve-end. Every one will be struck by the obscureness of Lotze's theory. Besides the fact that there is no 'amorphous parenchyme' (for even the unfibrous mass of the grey matter

of the brain is granulous) Lotze attempts as usual to reconcile all kinds of hypotheses which yet contradict each other. Such is his Real, which is permanently, but yet not immutably unique; it does not fill space at all, and yet it is banished to the parenchyme; it has dynamical reciprocity with nerve-ends, but only in that particular place; it has its fixed abiding place and yet moves hither and thither within that place; it is supposed to gather up the impressions; which yet were supposed to be already known to it through its dynamic reciprocity of action. Both here and generally, we lament that Lotze, with all his sagacity, had neither the courage nor the clearness necessary to logical consistency.

The chief argument against the admission of a 'seat' of the soul or of a psychical atom is the fact that there is no point in the brain where all sensory nerves end and whence all motor nerves proceed. The psychical atom (of Herbart, Lotze, and so on) would appear to be *superfluous* when the parenchyme is brought forward as a medium; for if the latter is affected in different ways by different stimuli, it plays itself the part of the soul. Further one would think that the knife of the physiologist must some time or other have come in contact with the psychical atom, and thus have brought about sudden death.

One materialistic conception of the soul regards it as a kind of *fluid* which is related to that ether of which the undulations appear to us as light. Thus R. Wagner compares the substance of the soul to the invisible and imponderable fluid, which becomes apparent, *i.e.*, is set in motion, by the contact of two heterogeneous metals, ponderable fluid having been intro-

duced. Virchow, who assents to this hypothesis, reminds us that the muscles, when they contract, and by their contraction, set free warmth which we cannot regard as having a peculiar part of the muscular substance for basis, and which yet on its part is of the greatest and most decisive importance for the performance of the muscular functions. The psychic substance hovers consequently, like the ether, between the ponderable masses of the substance of the brain, with which it is so linked together that whenever the nerve-substance changes it changes too. But against this we may use the objection (which we have above, p. 87, shown to be valid against materialism (that the really existing psychical functions are on this view attributed to anything rather than the *soul*). And further, a fluid which consists of extremely fine, imponderable *atoms*, united among themselves in the form of a gas, and which penetrates, like ether, the ponderable masses of the brain, contradicts the *unity* of consciousness.

Let us finally consider the hypothesis of Volkmann, who conceives the seat of the soul as a point, as an *unspatial* place in the body. Spirit, as such, is apart from any reference to space and time, *i.e.* there is nothing in the notion of it which could cause us to join to it in thought something else which has to be thought under the forms of space or time. To man's soul, on the contrary, which we have to imagine as the subject of ideas like other spiritual beings, we give a reference to space and time; to the former, in so far as we are obliged to conceive of the beings with which it comes in contact, as spatial; to the latter, in so far as we allow to the ideas which it develops in this contact, a determinate place in the course of time. The

soul is thus *somewhere* and *somewhen*; it is in the body, by stimulation from which it produces its ideas, and is in that time in which this operation takes place. But according to Volkmann, the pure *negation* of space and time must be attributed to soul itself. For as a *simple* being the subject of ideas fills no space, and as a *being* it continues free from every condition of time-duration. Since then neither the whole brain nor a part of it can be pointed out as the central organ of the soul, we must, according to Volkmann, assume a *place* where all stimuli end, and from whence all motions proceed, but which nevertheless need not be capable of being pointed out anatomically. Volkmann imagines it as a mathematical *point*, as a *focus*, not indeed of nerve-fibres, but of nerve-stimuli taken altogether.

Griesinger holds to a similar view (*Pathologie und Therapie der psychischen Krankheiten*, 1845), as do Hagen, George (*Psychologie*, p. 28), Burdach (*Anthropologie*, § 201); also Flourens, Caspari, Ludwig, Lotze, and Valentin.

We shall return again to Volkmann's hypothesis in the paragraphs which follow.

§ 9. METAPHYSICAL DIGRESSION.

49. Why is a metaphysical investigation necessary? From what has gone before we have perceived that physiology, anatomy, and pathology are only able to offer us *universal* or *general* truths. The *significance* of their results and their practical *value* as regards psychology, depend, on the contrary, on the fundamental metaphysical view of the individual thinker. And rightly so, for it is to *metaphysical* inquiry—which

seeks to go behind the nature of phenomena, which by making use of the empirical details of particular sciences, searches into the ground, connection, and aim of things—that we must look for a satisfying explanation of the problem of the soul.

50. What interpretations may we regard as possible? It is an irrefragable fact that body and soul act upon each other. With a sound *body* the soul is fresh and lively, with a sick body it is weak and miserable; as the body is strong or weak, wakeful or sleepy, sober or drunken, so is the soul. Destruction and injury of the brain induce death, madness, or imbecility. Repletion and hunger, walking or lying down, have an influence on our frame of mind, and to the bodily changes of age corresponds for the most part the psychical condition of each period. On the other hand, our body too depends on the *soul*. In the *eye* there shine joy and gladness, longing and desire, courage, anger, and enthusiasm; the *voice* is in many ways modulated by our frame of mind; now it sounds strong and full, again soft and gentle. In *speech*, again, the soul reflects itself most distinctly; wherefore Socrates said to Charmides, ‘Say something that I may see thee.’ *Mien* and *gestures* also express our mental state in a striking manner; the angry man clenches his hands, stamps his feet, shows his teeth, snorts and shivers, is pale and red by turns. Nodding the head signifies assent, shaking the head signifies refusal, tossing up the head shows defiance, and so on. Thus psychical experiences operate directly upon our bodily condition; joy is a pleasant feeling—thence proceed the bright look, the smooth brow, the cheerful mien, the easy walk, the vigorous pulsation of the

blood which expresses itself in quick and strong beats of the heart, in singing, whistling, frisking, and shouting. Pain has a directly opposite effect.

Besides this reciprocal action between body and soul, it is an established fact that all that takes place in our consciousness depends somehow on physiological processes. There are physiological processes corresponding to simple sensation, to the synthesis of sensation into ideas, to the reproduction and association of ideas, to feelings and manifestations of volition. And though reflex movements are not all immediate matter of consciousness, yet they are, as it were, the groundwork and conditions of consciousness.

The oldest (because the natural) view is *dualism*, which regards body and soul as two quite distinct beings. And in fact it believes that the soul—like a body which is struck—receives impressions from the bodily organism, and, in like manner, gives impressions to it. Descartes wishes to amend this system of ‘physical influence’ (*influxus physicus*) by making the influence of each factor upon the other to be brought about every time by means of divine assistance. In place of this miraculous occasionalism, Leibnitz substituted pre-established harmony, which does not, however, explain the connection of body and soul; and that quite apart from the difficulties peculiar to monadology.

On the other hand, *monism* conceives body and soul as *the same* (*idem per aliud*), as two projections of the same object. And, in fact, the spiritual appears to *materialism* as a manifestation and a product of corporeal processes. But justified as is its polemic against vulgar dualism, still its own attempts to solve *psychical* problems are unsuccessful, whether it

atomistically identifies the soul as *substance* with the brain or a part of the brain, or with an imponderable something pervading the brain—or regards it *dynamically* as equivalent to the function of some organ, or to the effect of several organs taken together. The methodological *principles* of monism are in themselves praiseworthy: namely, that we should avoid ‘arbitrary abstractions’; that we must proceed from the known to the unknown; and that we should not unnecessarily multiply principles. Still the application of these by materialism is one-sided. It goes so far as to treat the dependence of psychical upon corporeal processes (to which we have frequently referred) as an *identity* of those processes; it obliterates the boundaries between mechanism and organism, between plants, animals, and man, &c. But the fundamental principle of materialism, ‘The soul is matter,’ remains a mere *hypothesis*, for it is neither self-evident nor strictly demonstrated. The former appears from the existence of other theories, the latter from the fact that dependence is far removed from identity. The fire which is kindled from ice by a burning glass is yet not of the *same nature* as ice. The identity of brain and soul is no unquestionable fact, but an over-hasty conclusion from analogy, which external experience has hitherto not confirmed, and which internal experience will always disavow. Instead of an explanation, the materialist gives us an *edict*, demanding that we should think of a purely intensive process as extensive, or that we should identify an effect with its totally different cause. To say that a feeling is really the vibration of a brain-fibre, or really an electro-chemical process, is manifestly no explanation. For the vibration which may be parallel to that feeling,

or may be its foundation, is yet not that feeling itself. To identify both is, as Fick strikingly observes, as bad as to explain the pain of a broken leg by the sight of wagons in collision. We have indeed already (pp. 58, 83) seen that between psychical and corporeal processes there is a *gulf* fixed. The modern materialist adheres to a formal worship of brain, and superstition regarding matter, which are not consistent with any theory of knowledge. For his axiom—that our only data are *bodies* and appearances of bodies, is absolutely untenable. Not only is it a fact that merely *temporal* and *intensive* conditions exist, as well as temporal and spatial, but (and especially) it is not bodies but *ideas* that we have to regard as actual data, and ideas are *intensive*, not *extensive*. Thus materialism would have to proceed from ideas in accordance with its principle of drawing conclusions from the known to the unknown. Little as principles should be unnecessarily multiplied, as little should we overhastily identify different things. And if materialism boasts of having abandoned the arid waste of *speculation*, this is a great self-deception. For the notion *matter* which materialism substitutes for spirit, is, as we have elsewhere shown, equally speculative and metaphysical. Further, nothing is gained by making psychology a part of the *physiology of the nerves*. For this science is still so little defined, as § 8 has shown, that it is not fitted to be a basis for any other science. Above all, the materialist is not at all able to solve the *psychological* problems of consciousness, idea, thought, memory, freedom, &c.; quite apart from the facts that, in cases of brain disease, sometimes soundness of mind, and sometimes the reverse, has been *observed*; that persons mentally diseased have shortly

before their death returned to a normal condition; that imbecile persons have waked from sleep to sane consciousness; that in many a large skull a small soul dwells. The materialist further overlooks the fact that the data of consciousness (§ 7) are the foundations of all knowledge; external experience (so called) belongs also to the domain of consciousness. Thus *sensation* also is a subjective reaction to stimuli from without. Space and time, causality and substantiality, which the materialist employs in the explanation of nature, are intuitions or notions of the subject.

From this point of view arises the other aspect of monism, absolute *idealism* or *spiritualism*, which makes the whole world a mere reflex of consciousness. It explains the body by the soul. And in fact it regards body either only as an *idea* which the soul has (as Berkeley, J. G. Fichte, Schopenhauer, and von Hartmann), or it gives to it a relative *independence* in conceiving it as in its substance something different from the soul, but regards it as in the first instance formed by the soul (cf. Aristotle, Thomas Aquinas, later E. G. Carus, Schubert, Burdach, and J. H. Fichte). Or else it regards the body as *unconditioned* positing, yet consisting of several substances whose quality and that of the soul are homogeneous (Beneke). This view is then the direct counterpart of materialism, as is the cognate *doctrine of identity* of Spinoza, Schelling, and Hegel. Doing away with contradiction, it considers the *absolute* as pure *action* (J. G. Fichte) or as pure *existence* (Hegel); as absolute *becoming*, from which all that appears to be is (Schelling), or as absolute *being*, in which all that appears to take place happens (Spinoza); it is either the *ideal*, from which

the *real* proceeds, or *vice versé*. But absolute idealism does justice neither to the objective external world nor to the individual. For the ideas of space, time, causality, and substance do not arise in us without the help of the external world. This fact overthrows the idealistic assertion that nothing exists but *ideas*. Further, the manifold dependence of spirit on body contradicts the conception of the body as only a *self-manifestation* of spirit. To attribute 'absolute freedom' to the spirit testifies to the confusion of an ethical with a metaphysical notion. Thus we must not draw from the *purposive* arrangement of organisms any conclusions as to their production by means of their respective souls, but at most may only conclude as to the existence of an objective universal reason. Finally, the endlessly different *forms of individuation, mental diseases, and death* confound spiritualism.—The *theory of identity* had indeed this advantage that for it the problem as to the connection of body and soul really disappears; it was also not incompetent to interpret instinct, many morphological phenomena, and the animation of body by soul as a result of physical generation. Yet this theory, like materialism, rests merely upon a *dogmatic utterance* which denies difficult problems without explaining them. These objections are not removed by the *identification* of being and thinking. The system arbitrarily widens psychological and logical processes so as to include the historical and metaphysical. Individual psychical phenomena regarded as a mere 'Symbolism of body' remain almost wholly obscure, as indeed the untenable natural philosophy of this system shows.

Since *realism* must always pass over into absolute *idealism*, it attempts to solve the problem by setting

up simple beings exhibiting in their reciprocal action the coexistence distinctive of matter taken atomistically. Spirit is for this monadological system (Bruno, Leibnitz, Herbart, Harless, J. H. Fichte, Volkmann, and Lotze,) a simple reality which by conjunction with other Reals (monads) which constitute the body, becomes a soul. Yet it is not without cause that realism has been reproached now with idealism, now with spiritualism, and again with materialism. Leibnitz, by exalting mental above bodily monads, verges on dualism, while his 'pre-established harmony' openly expresses it. Herbart, who explains natural philosophy and psychology similarly, by disturbances and self-conservation, goes back to mere appearance. And we have already (p. 111) seen how fantastic is Lotze's wandering of the soul within the so-called parenchyme. The fundamental supposition of this theory, namely that the soul is a *simple* being, is untenable, because the only ground for it is the unity of our consciousness (cf. Q. 39). But unity is by no means the same as simplicity, as is proved by each organism as well as by our consciousness itself, in which we find succession and multiplicity (p. 73).

This critical contemplation has taught us this much, that we cannot unconditionally agree with any of the theories brought forward, and must therefore attempt for ourselves a metaphysical deduction of the nature of the soul.

51. What do we understand by 'force'? Whether the objective reality of the external world be acknowledged or not—we ourselves do acknowledge it—in either case physical processes and phenomena are fundamentally distinct from psychical ones, as we saw

above (Q. 32). If we look closely at visible things we distinguish two things in them ; namely the unity of their nature and the plurality of their properties. A piece of gold, *e.g.*, is a unity, from which we abstract the properties : heavy, round, yellow, shining, resonant, hard, smooth, &c. That unity denotes the *extension* of the notion, this plurality its *content*. The nature or substance of a thing appears to us at first sight as the *permanent*, the properties as *the changing*. For a gold piece remains gold even if it be no longer shining, or no longer round, or no longer smooth. But here, indeed, a wider difference between the properties obtrudes itself ; some appear to us as *essential*, the others *not*. A gold piece of twenty marks may no longer shine, and no longer be quite round or smooth, but it must have preserved a certain weight, it must have remained gold, otherwise it would not still be worth twenty marks. Thus then gold is the substance which as the real nature is opposed to the changing accidents ('contingent' properties).

But we have not as yet penetrated beyond the surface in this inquiry. For those properties which at first seem to be mere names, or at most lifeless states of the thing, show themselves soon as *spontaneous activities* of it. 'Gold is yellow' means that the waves of light break against it in such a manner that we receive a nerve-stimulus which we call yellow ; 'Gold weighs so much' indicates that it presses upon the earth, or the surface of the hand on which it rests, in such a manner that we feel a particular stimulus. In the same way the smoothness of the gold piece is only an indication received from the impression upon our sense *of touch* ; but a *certain behaviour* of the gold particles

lies at the base of this impression : namely, that they cleave very closely to one another. And as with the *external* so it is also with the *internal* properties ; they also express only kinds of *activity*. The brave man goes to meet danger ; the lover of truth strives to get at the truth and to make it valued ; the lover of art wishes to see or produce what is beautiful. But activity presupposes *forces* which operate. This is an incontestable axiom.

Indeed we can only observe force in its operations, in the phenomena and changes which it produces, in the visible world, in the movements of material substances. Let us think of a *locomotive* in motion. The *force* by which it is moved is steam, this was water at first. It puts the machine in motion in this way—a piston offers it resistance, and by virtue of this the motion of the steam is transferred to the balancing wheel. But this again can only move the locomotive because the iron bands offer resistance to the wheels. Thus we see the motive force belonged first to the coals, therefore to a certain kind of matter ; then it passed on to other matter, and only by means of this was the transfer of force possible.

Or take another example. A tile falls from a roof and kills a child. Before it fell it lay quietly in its place, its weight amounted to barely a pound ; the child could have carried it on his head without injury : whence does this deadly power come suddenly to it ? From its fall. Has its weight been increased thereby ? No. Or the material which composes it ? Certainly not. Only its force is increased ; the force which we recognise by its operation, and can observe because of the accelerated movement. And there is

also here an underlying *force*, namely the gravity of the earth which attracts the stone equally at every second, so that in each second it falls fifteen feet; but this force would be inoperative were the stone immaterial.

52. What contradictions are comprehended in the notion of 'matter'? Let us now consider matter, or material substance, more closely. In general we understand by it that which is either still formless, or which has lost the form that it had, and can therefore assume any possible shape. Thus the *artist* designates marble as the material out of which he will form his statue; so the *poet* regards the tale which he uses for a drama; the *housewife* understands thereby the raw products which she buys from the grocer. That which flows from a wound is material substance; and the *corpse* returns to formless matter by processes of corruption. Consequently in a bodily as in a spiritual sense, matter means the *unformed*. On account of its opposition to form, it has been contemptuously designated as the unfinished, the non-existent, even as the bad and evil as compared with mind or spirit; but, on the other hand, also as the eternal, the truly existing, the real; because, as has been shown, without matter even the highest creative power is inoperative.

If we here hold fast only to the *conception* of *natural science*, matter is that which makes itself known through the *feeling of touch*, or is in substantial or causal connection with phenomena of touch. That this property—*capacity of being grasped by the hand*—characterises matter but imperfectly, will soon appear. For natural science teaches that matter can be *analysed not only mechanically*, into homogeneous

elements, but also chemically, into heterogeneous elements, which thus form the fundamental elements of material phenomena. But these *molecules* are not capable of being grasped, in spite of the fact that all matter consists of them. Indeed, investigation of nature goes still further, for besides molecules which can be seen by means of a microscope, it assumes also extremely minute ultimate particles or *atoms*; and these both *ponderable* and *imponderable*. The former have weight and are subject to the law of gravitation; the latter, which surround the ponderable in the fashion of a sphere, bring about the phenomena of light and heat, magnetism and electricity. The former may be called corporeal atoms, the latter ethereal atoms.

Thus tangible and visible matter consists of absolutely intangible and invisible atoms; the supersensible is the foundation of the sensible; solid tangible substance evaporates on closer inspection, and that which to a superficial view appears as materialism turns out to be transcendental speculation!

How evident it is that this theory of atoms is nothing more than a rash *hypothesis* is shown, in the first place, by the *incompleteness* inherent in the idea itself. For if the first mark of atoms be their infinite *smallness*, they cannot be distinguished from *nothing*; further, since the halves of two straight lines bear the same proportion to each other as the wholes, therefore the infinitely small parts of the longer of two lines would be *greater* than the infinitely small parts of the shorter line. And if a line be composed of an infinite number of points, a line from one end to the other of the line drawn from point to point would be impossible, because an *infinite time* would be necessary to draw it.

The well-known example of Zeno about Achilles and the tortoise might be employed here. According to this principle (of infinite division), the hands on a dial could never overtake one another, two converging lines never cut one another, the cone never end in a point, the edge of the knife-blade never be reached. Thus the infinite divisibility of *matter* is only *imaginary*. The atomist therefore has to face these *alternatives*: Atoms are either parts of matter, or are immaterial. In the former case one holds to concrete matter without discovering its principle; in the latter we have the contradictory supposition that matter is composed of that which is immaterial. Thus Lotze designates atoms as super-sensible unextended points. Fechner and Cornelius hold the same view. A further difficulty arises as soon as we inquire whether atoms are homogeneous or not. If homogeneous, we have only a quite indeterminate matter; if not, concrete matter is already supposed; while what matter really is still remains to be determined.

Still more hazardous is the acceptance of *ether atoms* as the medium of corporeal atoms. Since even the former are discrete particles, many (*e.g.* Fechner and Cornelius) maintain the existence of a second order of ether which fills the empty space between; unless it filled this a still rarer ether would be necessary, and so on.

But the atomist finds the greatest difficulty in explaining many physical phenomena; *e.g.* the breaking of glass by concussion, the hardening of moist cement, the cohesion of carbonate of chalk in consequence of the mixing of atoms of chalk and carbonic acid, the *expansion* of bodies by heat, the complete smash of

quickly cooled drops of glass which is caused by breaking off their points, the solution of sugar crystals in water, the transformation of solid and liquid bodies into the form of gas. For if atoms always remain the same and only aggregates of them can change, then gases must consist of the same atoms as the bodies from which they are developed. In the latter they attract one another, in the form of gas they repel one another, which only ether-atoms should do. Yet the corporeal atoms cannot have changed into ether-atoms, for these must certainly be *imponderable*, whilst gas-atoms are ponderable. The question becomes especially difficult when atoms are regarded as of equal thickness, size, weight, and hardness. Further: the *friction* and *wearing-out* of bodies appears to be impossible, if ether-atoms are between the molecules, for if this be so they must prevent all immediate friction. *Motion* is equally difficult of explanation. For if empty space be denied and every place is thought of as filled with inelastic atoms, then all movement would be stopped.

Since then atoms *alone* in no way solve the problem of matter—for either they are material and then the principle of their being is yet to be sought, or they are immaterial, and then matter cannot arise from them—it was sought to solve it by the acceptance of the so-called *molecular forces*, namely attraction and expansion. According as the attractive or the expansive force preponderates, bodies should be solid or gaseous; in fluids both are in equilibrium. But what is the meaning of saying that an atom has forces? Do they repose in it fixed and ready for action, or does it call them up according to its pleasure? And do these remain confined within the limits of the individual atom, or do they go

out beyond it? In either case there is an absurdity. For if attraction works only upon *one* atom, matter is not in question; if it works upon others, then the activity of the atom is where the atom itself is not, and the expansive force would shatter the atom asunder, or attraction would draw it together to one point. In accepting the existence of ether-atoms between the molecules, the difficulty is not put an end to; rather all questions repeat themselves, especially that as to what *stimulates* these alternately, so that now one and now the other force has the preponderance. Further, how can opposing forces be *attached to* the same atom? Finally, how can they operate *outside of and between* the atoms to which they are at the same time attached? It is obvious that this hypothesis as to the help of molecular forces makes atoms themselves quite *superfluous*.

Since then the definition of matter as that which can be grasped (p. 124), has turned out untenable, we go back to our definition of matter as the unformed which may be formed and determined. But there is not, we know, anything absolutely unformed, everything has *some kind of form*. Let us therefore start from *another* position.

It is, in the first place, indubitable that all knowledge consists only of *ideas*. Besides 'inner' ideas (Q. 38) we have external ones, *i.e.* sensible perceptions of individual things in space. If we abstract their peculiarities there remain to us the general notion of *phenomenon*, and the idea of an *unknown something* which appears. *Matter* then is that which appears to us sensibly. That this is not the 61 or 65 *elements* is self-evident; and that it cannot be the atoms *believed in by natural science*, we have shown above; still we must not

understand by this that which is indicated by the designation 'primal matter' or 'matter in general.' For 'matter in general' does not exist any more than man, stone, horse in general; quite indeterminate, formless matter is a nonentity. But if one would endow 'primal matter' with certain *qualities*, then (apart from the fact that in that case it would no longer be 'substance in general') the question would arise, whence has matter those qualities? If it has bestowed them on itself, then it is not passive, or formless, and then we should inquire into the grounds of such a power of self-formation; if the ground thereof should lie elsewhere, in some other principle, then primal matter would no longer be primary, but something created, as indeed many atomists assume.

Further, if one were to say that matter is *compounded* of the simplest elements (atoms, Reals, &c.), then these would be the principle of matter, but we have already recognised the untenability of this view; then if we think of it as simple and un compounded, the question remains, whence comes the plurality of things? Consequently the popular belief in primal matter, from which the Kosmos has arisen of itself, is untenable.

The existence of matter involves emphatically and unconditionally a *force*, by means of which it exists. Matter without force is nothing; and so is force without a material substratum. Still matter and force are by no means *identical*, as the materialists imagine. For then there could only be *one* matter and *one* force, whilst yet it is evident that different forces exist. On the other hand, we must not think of the principle of matter as insubstantial force or *immaterial spirit*.

For this does not bring us any nearer to an explanation of the cosmic order. For if the primal matter be placed *beside* the immaterial primal spirit, then the last must have *formed* the first either by its word or by its action. In the former case we would have the God of the Old Testament, in the latter the Demiurgus of Gnosticism. In the former case matter should, in order to be able to obey the Divine commands, have a certain *intelligence* as well as will and force, properties which are denied to passive, lifeless matter; in the latter case the Creator should not only form matter externally, but should actively pervade its very smallest parts. Consequently in both cases matter 'devoid of force' would entirely disappear. And here too comes the consideration that the material could never arise from the immaterial, and that the latter could not exist at all without material substratum (p. 123). The so-called 'creation out of *nothing*' is a dogmatic misunderstanding of a Platonising passage of Scripture.

Therefore we reject both the dualism of matter and force, and the one-sided supposition of a material or immaterial principle, but we regard as the *substance of the cosmic order* the *spirit who is vitally active* under the form of *matter*.

We thus avoid the above (cf. Q. 50) depicted difficulties of dualism and monism, whether these appear as spiritualistic, materialistic, or realistic. Our *ideal-realism* is first and foremost exempted from the task of demonstrating at the outset the *origin*, indeed the very *possibility*, of life, soul, and spirit, since we have recognised them as belonging to the notion of the one *substance*. Spinoza has already indicated this view in *asserting* that there is only *one substance*, *i.e.* one being,

existing and cognoscible in and by itself, whose two attributes (at least as comprehensible by us) are thought and extension. Kant also says that at the base of matter as mere phenomenon there lies a noumenon as substratum, which can be known by no possible predicates, with which (as with our soul) thoughts can be present, and of which we cannot know or say that the soul is distinct from it. Still more decisively does J. H. Fichte express himself, in calling the opposition of matter and spirit 'unscientific,' since it is no contradiction to say that spirit fills space and that matter thinks. Still he falls back again in many ways to dualism; as when he calls the invisible world the only real one, or says that matter is nothing objective, or that both notions are mutually exclusive. Drossbach, A. Stendel, Frauenstädt, Planck, Cornill, and others agree with us in conceiving matter and spirit as the two modes of appearance of the same one substance (God). There is therefore no matter which is not somehow pervaded by spirit, no spirit which is not manifested in matter.

53. How does the purposiveness of nature appear?

We have just seen that in things (the Kosmos) the *substantial spirit* appears, discloses itself—it does not in things lose its essential nature. And in fact things are as they appear; this we learn from the theory of knowledge. For since the appearance of a thing is the same as the sum of its *properties*, and these (p. 122) indicate its *spontaneous activities*, the nature of the thing must be manifest in its appearance. Certainly our discursive thought does not grasp all properties (*i.e.* activities) of things, for to do that we should have to be ourselves *immanent* in things. But since *forces* only exist in as far as they manifest themselves—even

if it is only as force of opposition—so undoubtedly that which things *are*, comes to light in their appearance.

But not indeed their *whole* nature. For since this is contained in the *total sum* of the properties of a thing, and these do not all come into action at the same time, because they are partly hindered by reciprocal action with their environment, one may separate the force which is at the foundation of a thing into free and fettered, into *activity* and *faculty*. At the same time reciprocity of action refers us from individual things to the *Kosmos*. For neither force exists without *action*, nor passion without *reaction*. The existence of a thing here and now is therefore the result of its reciprocal action with *all* existing things here and everywhere, and even with all that have existed. Every individual thing is the product of *all* the forces of the universe.

We have not here to examine the substance (*i.e.* God) which *supports* and maintains this universe. But that such does *exist* is, according to what has gone before (cf. Q. 52), self-evident; indeed it has a more real existence than we ourselves. How we have to represent it to ourselves is explained by metaphysics. Here we only need to call attention to some points which prove the *unity* and *rationality* of nature.

The ~~conformity~~ *to law* of the course of nature is the presupposition without which neither theory nor practice is possible. But if we examine what is meant by the different significations of 'Law,' we understand by it either a *property* of certain bodies, or a *cause* for certain processes, or a constant *fact*, or, finally, a *force*. All these significations amount to this, that a certain *force* always *discloses itself* in the same way. In this,

again, lies the double fact, that *something spiritual* discloses itself, and, secondly, that there is something existing *in which* it becomes apparent. Now since the most multifarious forces are in reciprocal action without destroying the universe, there must lie at the base of this universe a fixed and yet movable *order*. In the same way all natural objects stand in an internal reference and relationship to one another, which, as was shown above with reference to atomism (p. 125), presupposes *continuous substance*. But pure *mechanism* suffices to explain neither chemical phenomena, nor those of light, heat, and electricity. Whence comes it that the long-established conditions of atoms suffer change? Whence arises light, whence the perpetual oscillation of bodies which is perceived as warmth? Is not this force, which acts everywhere and always, *i.e.* apart from space and time, something metaphysical, since it exactly contradicts the Law of Inertia and Mechanics? Thus it comes that in accepting the theory of atoms, which natural science defends, we are confronted by this *alternative*: they are either moved by electric force, or they move themselves. If the *former* be the case, the force lies *outside* the atoms, consequently outside of the material world; thus it would again be a metaphysical force. If the *latter* alternative be accepted, the atoms move themselves from *within*, and therefore not mechanically.

The insufficiency of mechanism becomes evident from this, that we can by no means reduce all forces of nature to *one*, but may at most speak of a *relationship*, of a reciprocal excitation of natural forces. For at times one force excites *all* others at once, at times again it stimulates only *some*. Certainly all are so *dis-*

posed that they can *communicate* their activity one to another, and by this means their co-operation to the same end and their living interaction is made possible. They all stand too under the same laws—namely that their activity is in direct proportion to their *intensity*, and in inverse proportion to their *extensity*. But we must, in opposition to natural philosophy, lay stress on this point, that neither the mechanical nor the chemical forces, neither the forces of gravity nor ‘molecular forces,’ have hitherto been *understood*.

In the hypothesis of Kant and Laplace the necessity of presupposing a metaphysical force dominating matter appears especially striking. Apart from the question *whence* originates the ‘immense gaseous sphere,’ it can not *of itself* have acquired a solid *kernel*, since this contradicts Dalton’s law. Whence, again, has it its *rotatory* movement? How can centrifugal force have gained the upper hand over the force of attraction (or centripetal force), while yet it is precisely the increasing concentration, *i.e.* attraction, which must be the cause of the quicker rotation and thus of the increased centrifugal force? Since the latter increases in proportion to the former, it can *never* surpass the former. As for this, so also for the ‘disturbances,’ and the unequal accumulation of substance in the rings which have been thrown off, an *especial* force must be assumed. Thus numerous irregularities remain unexplained. Mars, so distant from the sun, is smaller than the Earth and Venus; Saturn is smaller than Jupiter, and much larger than Uranus. Venus and Mars, again, are less solid than the earth. The irregular *diversity* of eccentricity in the planetary *orbits*, of their angle of inclination to the ecliptic, and

of the positions of their axes, are inexplicable by the mechanical theory. Still more wonderful is it that the moons of Uranus move in an orbit almost perpendicular to the ecliptic, and that the second and fourth move backwards, from east to west. The *comets* seem too thoroughly unique to have derived their origin from the sun; they do not revolve round an axis, and they move in an opposite direction to the planets. And indeed if, as assumed by Secchi, they sweep from one solar system to another, then the theory of Laplace must be abandoned. In contrast to the comets, again, the *nebulae* remain in apparent rest, they have no central point, nor solid kernel, and they do not rotate. The *sun* also presents difficulties. For since its warmth, which continues always equal, is not to be explained as a result either of simple combustion or of a rapid influx of meteors, but only as arising from its increasing *condensation*, then, according to Laplace, to this very day, rings and planets would continually detach themselves from it. But this confessedly is not the case. Finally, *spectrum analysis* declares against the mechanical theory, since oxygen and nitrogen have not been found in the photo-sphere of the sun.

Above all, the *organic* world shows such a purposiveness in formation and development, such a correlation between structure and conditions of life, that it can only be from having prejudged the matter that one can refuse to recognise an *objective reason* in the world. It is reflected even in *inorganic nature*, and in the whole of *cosmic development*. For in order that the law of gravitation should exist and operate, an original precision and order of the heavenly bodies is requisite. And as with the stars so also in our earth, the same

wisdom is apparent in the forecasting of consequences and the co-ordination of causes in regulated activity.

54. How is organic nature distinguished? Natural substances which are found upon the earth are either *organic* or *inorganic*. Organisms, *i.e.* plants, animals, and men, are distinguished from other natural substances:—

(1) By the *unity* of all their parts, which serve as members to the whole. These members are not merely mechanically juxta-posed, but they form a system having unity and a capacity of self-reference.

(2) It follows that organisms develop themselves from *within*. Starting from a germ (egg or cell), they grow and support themselves by means of the so-called *metabolism*, until they either reach their originally intended size, or are violently destroyed from without. The source of this development is:

(3) The Idea which dominates each organism. If we expose germs of two different plants to the same influences, as soil, climate, care, and so forth, still different plants will spring from them. Growth, nourishment, and propagation are purposively regulated; they systematically subserve the whole, which as an *end* precedes its parts. Let us consider more particularly the *human* body; its continued existence is mediated by the action of the blood, which continually and discriminatingly takes up and carries away from each individual member refuse and injurious matter, and on the other hand supplies to each that which subserves its special end; it supplies the bones with phosphate of lime, the muscles with nitrogen, the salivary glands with saliva, the ears with the waxy aural secretion, the *eyes* with aqueous and vitreous humour, the nails and

hair with horny substance, the nerves with brain substance, the lungs with carbon, and so on, each substance at the right time, in the right place, in due quantity, in proper chemical combination, precisely as the purpose of the whole requires. Plants show a similar although a less complicated system of ordered functions.

(4) Thus in all organisms there reigns a certain *spontaneity* (self-activity), which appears especially in nutrition and propagation. That is, in plants a change of inorganic into organic substance, in animals a change of 'lifeless' into living matter. In each case the matter of the organism and its environing forces are adapted to its strengthening or completion, and this not at all by external compulsion, but by internal impulse. In inorganic nature quiescence and isolated completeness are the goal. Thus water tends to the rest of hydrostatic equilibrium; in crystallisation the process comes to an end when crystals are formed; on the completion of chemical processes, the new products are in a state of quiescence. The changes of inorganic nature are thus, as it were, only transitory *disturbances*, are a mere road to completion and inactivity. It is quite otherwise with organisms. Here there is continuous change, development, process; material substances are assimilated and got rid of—the form, broadly speaking, remains. If this process of development ceases, the form is destroyed, and the material substances, which by it were guided to an end and purpose, return to lifeless inactivity.

(5) On account of this self-assertion of the form during continuous change of material, each organism is an *individual*, i.e. a being self-contained and indi-

visible, which in its own development fulfils both its own destiny and that of its *species*. The *propagation* of individuals is an acknowledged peculiarity of organisms. As these cannot, like the planets, produce a recurring series of motions, for they are not meant to be unchangeable and everlasting, they produce by generation a fresh edition, which is like themselves in general and yet quite different as regards the individual components.—In accordance with all this we define organism as a *system of forces*, which is developed *spontaneously* and *purposively* through the form immanent in the germ.

It can only be noticed as a *curiosity*, that Hæckel totally denies the difference between organised and unorganised beings. For on closer examination his argument appears quite insufficient. Moreover, spontaneous generation (*generatio æquivoca*) has not hitherto been demonstrated, and the Darwinian hypothesis is so contradicted by authorities of the first rank (Agassiz, von Bär, R. Wagner, Th. Bischoff, Murchison, Crawford, Beale, Dana, Flourens, Ch. Bernard, L'Evêque, and others), that we only acknowledge its fundamental philosophical thought—development—but not the proof offered, nor the exclusion of teleology deduced therefrom.

55. What do we understand by 'vital force'? All properties of the organism that have been just depicted constitute the phenomenon of *life*, which may be designated as the spontaneous and purposive self-activity of an individual.

Kant defined life, much too narrowly, as the faculty of arbitrary or volitional self-determination. For according to this we must not only deny life to all

plants, but must also regard as devoid of life all involuntary functions of the animal organism (the heart-beat, the formation and movements of the fluids of the body, &c.) And, indeed, since life is made dependent on freedom, it must even be denied to all animals (as was done by Descartes). Further, J. G. Fichte's definition of life, as unified force, does not suffice. Herbart says it is a manifold absolute Becoming, for the most part recurrent, lent for a time to a substance which has existed before, lasts on after, and which during life partly increases and partly decreases. This definition is too wide, for it would include, *e.g.*, even glaciers.

We have seen that life is only explicable by the presupposition of an *Idea* which develops itself in it. Hence J. Müller designates the principle of life as an invisible *activity* pervading the body and working purposively in accordance with its indwelling *Idea*. Other physiologists, as Gorup-Besanez and Liebig, call the principle of organisation 'vital force,' as distinguished from the mechanical forces. With them agree, among others, R. Wagner (*Der Kampf um die Seele*, p. 209), Burmeister (*Geschichte der Schöpfung*, p. 304 seq.), and Flourens (*De la Vie et de l'Intelligence*, 1858, ii. 88). Among philosophers we may mention Ulrici (*Gott und die Natur*, p. 215 seq.) Schaller (*Leib und Seele*, p. 125), Schopenhauer (*Parerga*, ii. 127), and Stendel (*Philosophie im Umriss*, i. 1,464 seq.)

It is quite intelligible that *materialists* should have protested energetically against this view. But apart from the Hotspurs of mechanism, Büchner, Hæckel, and Moleschott, who deny with energy the difference

between organic and inorganic nature, the opposition against vital force is merely a *verbal dispute*.

SA This is especially evident in Lotze, who, like Virchow (*Abhandlungen zur wissenschaftlichen Medizin*, 1856, i. 25), seeks to take up an intermediate standpoint between mechanism and vitalism. In any case the organic can only be explained *from itself*; still it may be a *mechanism*, although of a *peculiar* kind, which has proceeded from a particularly complicated connection of substances. But then Lotze himself confesses that organisms are endowed with peculiar forces; that they presuppose particular conditions for their origin and conservation; that their vital parts co-operate in a very purposive manner. He even speaks of an intelligent calculation, upon which the existence of the higher organisms depends, and supposes bodies to collect the materials necessary for their own completion. He has also chanced (*Mikrokosmos*, i. 22) to speak of the free vibration of vital force. And why should this seem strange? If 'conditions rule,' *forces* operate; if they are of a quite 'peculiar' kind, they are thus *distinguished* from *mechanical* forces, and the *law* according to which they work is also distinguished from mechanical laws. Lotze falls into these contradictions, partly on account of his leaning to Herbart, partly on account of his *occasionalism*. He also finds the origin of his law in 'a wise dispensation of the Creator'; and that which he calls 'the wonder of the connection between body and soul' arises from his view of the soul as not filling space (p. 110).

That the organism does not arise and live merely by means of mechanical co-ordination is shown by its *whole development*. For it begins with *one* germ-cell,

in which the whole organism is already implicitly *present*; at the beginning, consequently, there is unity, and this then develops from within into an apparent compound furnished with limbs. We have thus no external composition, having for result an apparent unity.

Further, before its birth the organism of the higher animals and of man takes several *steps in life*, and quite distinct one from the other, and thus really possesses (from a morphological point of view) different *bodies* one after the other. This 'metempsychosis' excludes occasionalism as decidedly as mechanism. Insufficient as is this 'psycho-physical mechanism' of Lotze for the explanation of the *vital process*, it appears from it that this process has to work out not only determinate, foreseen, unchangeable problems, but also problems that are quite new and which do not arise more than once. We need only mention the *healing process* of organisms, the acquisition of innumerable *dexterities*, the *instincts* which tend to the self-conservation of the individual and of the species. As in human ideation, we find in instinct the same action, unconscious and yet purposive, whose consequence is indeed much more certain than that of human ideation; in both cases we see a *teleological and plastic* (purposively forming) *force*, which forms out of unity the harmonious multiplicity of parts. Still each animal, in spite of its accordance with its specific type, is an *individual*, which leads its own life and which has its special task to fulfil in the animal kingdom (p. 137).

Thus one cannot forbear assuming in the vital process of each individual organism an *Idea* (schema, model, &c.) which continually supports and renews

the organism. For each part, each member of the body, draws to itself precisely that which is serviceable to it, in the process of metabolism in a manner quite peculiar to itself; the unity and connection of the organism cannot lie in the individual substances or processes, but only in the power which *harmonises* these, which continually conquers all disturbances, injuries, and hindrances. Whether this vital principle may, with the ancients, be called 'plastic soul,' or 'vital force' (Liebig, Ulrici), or 'the imaginative activity of the soul' (J. H. Fichte, Frohschammer), its *existence* is as little to be disputed as is that of the mechanical and chemical forces (p. 136).

Frohschammer has especially endeavoured, and with success, to refer the activity of the objective teleologico-plastic imagination to the domain of the organic. It is to him the principle of individualisation in generation and of the difference of sex as well as of life. Life in the proper sense is thus possessed only by that which possesses psychical (and thence also physical) inwardness; in which too the principle of organisation has become intensified to a soul, *i.e.* has attained inwardness. We do not indeed identify this 'vital force' with the soul itself. For if we did, *plants* could not be included, and they have life but not *souls*. Between plant and animal there is this specific difference, that in the former the totality of life is purely *objective*, while in the latter it centralises itself *subjectively*. Thus *stimulus* becomes *sensation*, and sensation presupposes that which we call *soul*. The soul manifests itself in sensation, ideation, and volition; and nothing of all this is traceable in plants. But where *there is* sensation, ideation, and volition there *some-*

thing must exist also which is to these functions as subject to attribute.

In our opinion the 'vital force' is nothing but *substance* developing itself into a concrete corporeal world, which becomes apparent in ever new and higher forms by means of successive series of beings.

56. How are men distinguished from beasts? No one denies that the higher animals, and man too, have arisen from less perfect organisms. The Darwinian hypothesis does not, indeed, suffice for the explanation of this development. For besides the influences of climate, country, and manner of life, besides education, the struggle for existence and heredity, we are forced to the acceptance of a designing, effective force, which either developed the varieties, races, and kinds out of the same species, or created side by side different and originally more perfect individuals. We give the preference, on the whole, to the *latter* hypothesis; according to it primitive organisms may have arisen in different places simultaneously or successively, which continuously developing and coming into contact one with another as they became more diffused, thus produced the multiplicity of kinds.

But that man is now the most perfect being, the 'Crown of Creation,' is acknowledged by the Darwinians themselves. But wherein does his perfection consist? The brain, as we have seen (p. 103), is no certain criterion of this; what seems to us more important is that the so-called 'Camper's facial angle' (which is formed by lines drawn from the outer auditory passage to the base of the nose, and from the most prominent part of the forehead to that of the upper jaw) is larger in man than in any other animal. He also surpasses them by

the manifoldness and intensity of the reciprocal action which takes place between his *senses* and the external world. Finally, to his *erect* walk is due greater variety and perfectibility of movements.

But a characteristic of men more striking than these distinctions is *speech*. All beasts only utter cries, although the higher have the organs of speech well developed. But a beast does not speak, just because it *has nothing to say*, *i.e.* because *reason*, in its proper sense, is wanting to it. For the *origin* of speech lies only partly in *exclamation*, *i.e.* in the nerve-stimulation which is denoted by tone or noise; with this *subjective* expression of feeling must be coupled the exaltation of some experience to the rank of an object. All roots (*ἔρματα*) denote an object as real, substantial Being, independent of the perceiving subject. This forming of the psychical material given through the senses has, as a presupposition, the division and the joining of parts, the distinction of subject and object, of a thing and its properties—in one word, *consciousness* (§ 7).

As the animal is distinguished from the plant by *subjectivity*, so man is distinguished from the beast by *consciousness*.

It has been attempted from the *materialistic* side to combat this by first lessening the difference from a *qualitative* to a *quantitative* one, and then obliterating it. '*Reason*,' says Vogt, 'is no special capacity of man, but only the capacity of generalisation in a higher degree; a capacity which beasts also have. The spiritual capacities of man, therefore, only differ from those of beasts in *degree*, not in *kind*.' But is this really the case? It is certain that beasts do observe and do gain experience, but they all through

want the *interest* in objects as such, which man involuntarily has, because his cognitive faculty has to develop. He is also *directed* to this by nature, because he wants means of protection, arms of defence and attack in the struggle against elements and beasts. The beast has no need to subject things permanently to itself; they interest it only so far as they have reference to its momentary needs. Consequently the *bodily* organisation of man is connected with his *psychical* organisation.

Yet Darwinism contradicts this too, in asserting our generic relationship to the 'Anthropoid' apes (gorilla, chimpanzee, orang-outang). The theory of *derivation* from apes has indeed been allowed to drop, since it is inexplicable how the struggle for existence, in which apes are evidently much more favourably placed, could have produced the deterioration of man. But the first assertion itself is *untenable*. For the *extremities* of both beings are quite different; only the upper extremity of man is a real hand and the lower a real foot; above all, the *skull* of each deviates from the other anatomically and morphologically, even in childhood. At most the skull of man has some similarity to that of the *lower* ape (Platyrrhinus), although the double articulation of the occiput is *only* found in man. And Virchow thinks that man can never derive his origin from the progressive development of an ape, because with growth the skull of the ape always becomes *more unlike* the human skull, and the brain of the ape grows very little. But Darwin says that both ape and man are descendants of the *same ancestor*—the former represents the retrogression, the latter the progress of development; but this contradicts his whole theory, apart from the fact that standing still is not the same

thing as retrogression. If the ape remained at the lowest stage, the origin of man is inexplicable; if it retrograded, then Darwin's principle of development to perfection no longer holds good.

We do not deny that beasts have a *soul*, for this exhibits itself in many kinds of sensations, ideas, and acts of will. There is an *objective, a spiritual, substance*, which as principle of organisation is extended throughout the organic world, and develops itself in beasts as living individuals. We find also in the animal soul *social* affections, the very germs of and tendencies to all human affections, as love and hatred, sympathy, jealousy, pride, &c. Also it cannot be denied that they have certain *general ideas*—*e.g.*, every sporting dog immediately recognises a gun. Finally, beasts share with man the constant common feeling of *subjectivity*.

The only, but the fundamental, distinction between the two consists in this, that beasts are wanting in *self-consciousness*. They are deficient in this point, because they cannot think. They may arrive at a certain *generalisation* from experience; but this only takes place instinctively (without self-consciousness), and has its determinate bounds. They are capable of *attention*—this is necessary in order to seize their prey; in doing this they develop *cunning*, even *dissimulation* and a certain degree of co-operation. But they lack capacity for the higher functions of thought, *abstraction* and *synthesis*. A beast will never learn to count, to reckon, to spell and read; nor to comprehend a mathematical theorem or a physical law. We even go further: we hold it to be altogether *wrong* to ascribe to the mental life of beasts—to fathom which is almost impossible—individual forms of *our own* mental activity,

as sensations, ideas, memory, reason, judgment, conclusions from premisses, and the like; as if it would do to attribute one *part* of our mind to beasts, without something else quite different being conjoined with it. In man everything is human, in beasts merely bestial. Therefore Kant is right when he says (*Werke*, i. 72) that it is quite a different thing to *distinguish* things from one another, and to *recognise the distinction*; and Lichtenberg strikingly remarks that the beast is to itself always *subject*, but man is both *subject* and *object*.

Because self-consciousness is wanting to them, beasts have no *æsthetic* feeling. This is particularly observable in the fact that they feel neither *loathing* nor *shame*; nor have they susceptibility for *the comic*—they cannot laugh. Further: their *senses* are not in such harmony one with another as ours are; the dog recognises his master, but not his master's portrait, because he only knows him by smell. Therefore no beast is interested in such ideas as those of the beautiful, true, good, just, reasonable, &c. Thence the merely animal world, with all its mechanical instincts, is lacking in true *skill*; with all its crude experience, lacks *science*; with all its social inclinations, is without *family life* and ordered *political society*, and in spite of fits of fear and love, has neither *morality* nor *religion*.

For the highest manifestations of mind, beasts want the necessary condition, *personality*, and this, again, rests mainly upon *self-consciousness*. *Consciousness of self* and *self-determination*, self-knowledge and self-affirmation, constitute the Ego, and by this it is that man is exalted far above all beasts. He is indeed an example of his species, but he is not, like beasts, that *merely*; for besides his specific character, he is at the

same time an *individual*, who possesses the capacity of setting himself in opposition to this his acknowledged limitation, of raising himself into universality and thus of surpassing himself. Therefore each man, like mankind in general, has his *history*; for him *culture* can and does arise out of nature, and *ideality* out of reality. Man makes the whole world subject to himself; if not to his will, yet to science and feeling. From *self-knowledge*, of which no beast is capable, man proceeds to the *subjection*, both of his own bodily frame and of all material objects, to his reason. If all cognition is spontaneous human activity, whereby man *understands* things, this his autonomy displays itself still more in that he makes all nature to be ever more and more the *instrument* and *symbol* of his spirit.

57. How do we define the nature of the human soul? According to what has gone before, it is not difficult to define the nature of the human soul. We understand by it the one divine substance which individualises itself as man, after having passed through the lower steps of its self-representation (in the inorganic and organic world; in elements, crystals, plants, and animals). The human soul is the *consciousness proper to the human body*. Its functions are, besides vital force and subjectivity, *personality*, i.e. self-consciousness and self-determination.

58. How are soul and spirit distinguished? In our own view, soul and spirit are quite the *same thing* when we speak of *man*. For the human soul *is*, as has been shown (Q. 56), spirit. We admit a distinction only so far as to denote by soul the substance which is, as it were, the subject of the human body, so long as it has not yet become a personality. But the aim and task of the

human soul is to *become* spirit, *i.e.* to spiritualise itself by self-knowledge and self-improvement. Thus we might just as well call Psychology *Pneumatology*.

We regard the distinction of soul and spirit as an evil remnant of *dualistic spiritualism*; because this, as we saw (pp. 106, 107), sharply opposed soul (as something simple and immaterial) to body, and distinguished in it again *three* parts, *viz.* a vegetative, sensitive, and thinking soul; so, gradually, the *Trichotomy* (tripartite division) which prevails in the Bible, and according to which man consists of body, soul, and spirit, came to be accepted. According to this the *body* would be something lifeless in itself, passive matter, which the *soul*, as the principle of somatic life, would first bring to movement and sensation; and on its side the soul only lived in, with, and by means of the body. On the other hand, spirit was sublimated, like the Godhead and the angels, to an entirely simple, incorporeal substance, which before a man's birth was with God in a pure, ethereal condition, and which would again rise to a better existence after the death of the body.

But we have convinced ourselves (cf. p. 129) that spirit detached from matter is a mere nonentity. In the same way the rigid passivity of matter, as well as of the body, appeared to us (p. 127) untenable. Rather the *body is* the soul externalised, spatialised, temporalised. The *spirit* is the soul which has ripened inwardly to personality. The soul always *corresponds* to the bodily frame simultaneously with which it came into being, but each human soul can *develop into* spirit, by being placed in right and fostering relationships, and by improving these for its own part. Thus a grown, healthy, civilised man is not merely a unity of

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body, soul, and spirit, but is the spirit animating one body, whose marks are self-consciousness and self-determination.

It is self-evident that according to our view the soul has nowhere its 'seat' in the body. It rather inhabits and interpenetrates the whole brain, the whole nervous system, and the whole body. But not, indeed, *in equal degrees* (e.g. in the nerves it dwells differently from in the muscles); for the one divine substance exhibits itself in the muscles as a mere animal soul, and in the nerves as human spirit.

59. What is the right view as regards the origin of souls? It is an acknowledged fact that a child *inherits* from his parents, not only bodily but also spiritual qualities; whilst at the same time he is a *distinct* individuality from both of them. The question which then involuntarily obtrudes itself—*when* and *how* has the child's soul originated?—is answered according to our fundamental view in the following manner.

Since the soul (or spirit) is the substance of the body, the soul and body of the child originate simultaneously.

Psychical force, as well as material substance, is derived from both parents and united in one in the most complete manner. The new psychic force thence resulting must naturally differ from the souls of the parents, and again in many ways resemble them. In the origination of new souls the souls of the parents are not normally impaired, any more than the magnet loses its power when it makes other bars magnetic, or than the teacher becomes more ignorant by instructing others. And every one takes for granted, in the case of *beasts*, that psychical force is propagated in reproduc-

tion. But that in the germ, and even in the unborn child, the soul *is not demonstrable*, tells rather *for* than *against* us. For as the organic vital force slumbers in the seed of corn, and must first be exposed to fostering environments in order to develop itself, so the germ, even when fertilised, requires the maternal organism in order to develop, and the unborn child must have air and light before, as an infant, it can manifest its psychic life. A force can *exist* without its activity being *demonstrable*, just as, *e.g.*, the electricity of mechanical friction requires a chemical process in order to appear. Thus the soul of the embryo is still in a state of *confinement*, as, *e.g.*, the force of gravity in all bodies at rest. As a *conditioned* force, which the soul is, it can only work when *incited* thereto by *other* forces, or when they *offer* it the means necessary for its activity. By this truth mental disturbances can be explained, as well as temporary unconsciousness, sleep, and the like; and in particular the dependence of the soul on the brain (§ 8). Thus its constantly increasing spontaneity and self-determination exist. We have given above (Q. 54) the *proof* as to how, from the first moment of its being, it works and *organises*.

We do not yet know whether the difference of sex is manifested at the very beginning, or is gradually developed in the foetus. The former seems to us more probable, since it must depend on some preponderance of the male or of the female nature. In any case the general analogy of both sexes is remarkable, and so is the higher perfection of male individuals among beasts. If we add to this the fact that a man has more brain and more mind than a woman, and that boys are born

later than girls, we might agree in the view of Aristotle, that woman is simply a male individual which has stopped at a lower stage of development. But indeed the truly *human* is only reached at the point at which the human creature rises above difference of sex and attains *spiritual* life. The possibility of such life is the attribute which distinguishes man from the lower animals. In any case we learn from comparative physiology that the contrast between male and female is more marked in proportion as individuality is more significant, *i.e.* as the *psychical* force of the organism is more developed: a proof that matter is only a means, and that soul is the *formative* element in propagation.

Our view may be called *Traducianism*, according to which the soul is produced at the same time as the body, a doctrine which was maintained formerly by Tertullian (*De Anima*, c. xix.) In opposition to it is that of Plato (*Tim.* 39, D. *Phæd.* 80, E.), which was maintained later by Origen (*De Princ.* ii.)—*viz. pre-existence*, which assumes that all souls were created from eternity and are born into this bad world in consequence of the fall of man. But, on the other hand, is the consideration that then innumerable souls were either incorporeal until their birth, or must have existed in embryo bodies. Further, they must in this pre-existence have all either been alike in nature and become different only in becoming incarnate, or each must have been adapted to its future body. The former is excluded by the close connection of body and soul, the latter would be a new kind of pre-established harmony. A third theory is *Creationism*, according to which the body *is derived* from the parents, but the soul (spirit) is

created by God and breathed into the embryo. The maintainers of this theory hesitate as to the point at which this communication of soul takes place. This was the doctrine of the ancient Church and of Calvin, while Luther and his friends were Traducians. F. Nasse has more lately asserted that the soul is first united to the body at the moment of birth, simultaneously with the first breath the child draws, or somewhat earlier. This view contradicts, first of all, the notion of the Creator, for He is thereby degraded to be a servant of man. Therefore we ask *when* it is that this creation takes place: before, or at the moment of, birth? For if an embryo dies, what becomes of its embryonic soul? If it dies, an act of creation has been in vain; if it does not die, we know not what can become of such an embryonic soul. The same considerations occur as to still-born children. Finally, the Creator must again have to deal with the body in regard to the correspondence between psychical and corporeal qualities. The fact that the history of the soul can be traced back even to the germ-cell, tells against the naturalistic conception that the soul suddenly vivifies the embryo we know not how or when. Frohschammer's theory of generation is related to our opinion: he conceives human generation as a secondary creation, the original divine, creative force being always active in man. He has supported this doctrine by the acceptance of an objective imagination, formative and purposive. He seeks thereby to mediate between Traducianism and Creationism, a thought which is to be found in Kant (cf. *Werke*, i. 226). But apart from the fact that the 'secondary creation' is only an image, Frohschammer is wrong in ascribing

it to the father alone, since the child is brought forth by the mother.

In conclusion, we mention J. H. Fichte, who has given much thought to the nature of the soul. His view is as follows:—The human spirit is a *pre-empirical* Real, which from its super-sensual base develops itself by reciprocal action with other Reals in the world of sense, and engenders therefrom its consciousness of this world. For him who brings his consciousness with him from a former state (his ‘faculty of vision’ as Fichte, with Plotinus, calls it), the whole world of sense is as the ‘face of the earth.’ Each soul is indeed in the first place the product of its parents’ souls, still a surplus, something that has no name, associates itself with this and gives to each man his mental uniqueness, his ‘Genius,’ which lives eternally, and thus must be preexistent and immortal. J. H. Fichte regards this transcendent wonder (personality) as a part of the universal soul—of God. It is easily seen that Fichte’s view is in fact ours, only that we have divested it of its mythical accessories.

60. What follows from the above as to the immortality of the soul? Our whole life is a constant dying; parts of the body continually pass away and are renewed in the change of substance, so that we are, as it were, in a constant state of moulting. But once for every man his earthly life ceases; be it by a sudden death or in consequence of old age, when the elaboration of material by the organism becomes ever more and more imperfect. The heart ceases to beat, the lungs no longer breathe, the blood stagnates, the eyes fail; the dead lies there, cold, pale and stiff, and, as we can easily prove, *has no sensation, feeling, energy or consciousness*—in a

word, has no *life*. And a few hours after death *corruption* begins, *i.e.* the decomposing of organic into inorganic substances. Piety towards the dead as well as our own self-preservation urgently call upon us to annihilate the corpse either by burning or burying. Where then is the soul of the beloved dead? Or does it no longer exist?

We will show, in the first place, that this question does not refer to *continued life in general*, but to it as *Personality*. It does not interest us to inquire whether the dead, or we ourselves, shall continue to exist as nitrogen, saltpetre, &c., but whether in the future, after death, we shall again have self-consciousness, *i.e.* whether there is between this life and the next a continuity of life.

We have already (Q. 52) acknowledged as indubitable the immortality of matter. Let us now shortly examine the arguments which are usually given in favour of the immortality of the spirit.

Let us begin with the arguments of *Faith*. (1) Usually the *analogy* with the vegetable world is appealed to. As the trees again put forth shoots and bloom, as the seed-corn is sunk in the earth and dies, in order thereby to become capable of life and of bearing grain, so we sadly hide more precious seed in the bosom of the earth, and hope that it will arise from the grave in strength and beauty: this hope would be naturally a delusion if it were not supported by other arguments. (2) *Practical* motives are therefore called upon, by directing attention to the *inherent* value of the soul. This, it is said, is capable of endless *improvement*; but here few can begin this, much less attain it. Innumerable *children* die before they have rightly become per-

sonalities ; and even in those who die in old age, how much remains *undeveloped*. What would not such men as Th. Körner, Schiller, P. Fleming, Raphael, and many others, have been able to accomplish had they lived longer? Is it in harmony with *the wisdom of God* that the development of the human spirit should be broken off with the earthly life? (3) *The Divine love* would also contradict this; for how should the Creator annihilate His creature, while at the same time it was His greatest deed of love to give it life? But if it should be said that certainly God has designed the constant perfecting of mankind, but not of the individual man, only of the *race*; that earlier generations continue to exist in the later, and the perfection of the latter is the end of the former; then all the earlier ones would have had no value in and for themselves, but only as a *means*. (4) It is also said that the fact that man alone of all beings has *memory* and *hope*, would contradict the Divine love, supposing man to be mortal. The beast is happy in the present, but man who foresees his death, torments himself with sorrow over so much time wasted, so many attempts that have failed, plans wrecked; and with longing for a better world where there is no more pain, nor crying, nor sin. Must all that be vain deceit? Would it not be cruelty on the part of God to have furnished us with memory, foresight, comparison, and hope, only to leave us, with pitilessness, in the lurch? (5) Impossible, says Kant, since the 'practical reason' postulates immortality. And in truth just as much on account of the reason given under (2), as on account of the truth of the *moral law*. For the chief condition of the highest good is *holiness*, i.e. the perfect conformability of our will to

the moral law. But this, since man possesses sense as well as reason, is *never* reached on earth. But since the moral law cannot demand anything *impossible*, we must assume a *progress* of moral perfection going on into eternity. Thus immortality is a pre-requisite for the realisation of the highest good. (6) Then there is the demand of *justice*, that virtue should be rewarded and wickedness punished. Both happen seldom in this life. Rather, we see many virtuous persons in misfortune, and evil persons in prosperity. Therefore there must be a *compensation* in the next life. This is a chief argument with religious teachers. For they assert that without the belief in Heaven and Hell all men would soon become irreligious, even immoral. St. Paul founds Christianity itself and the truth of the Gospel (1 Cor. xv. 14) on the Resurrection of Christ.

Now it is not difficult to demonstrate that all *practical* arguments are invalid. The *analogy* of man with plants refutes itself completely, since it is the very same tree that covers itself anew with leaves in spring, and that too only so long as it is *not* dead; the seed-corn springs again, though not as such, but changed. Thus the continuity of our personality, which concerns us so deeply, cannot be thereby warranted. The other arguments which proceed from the nature of *God* are thoroughly uncertain, because they attempt to support or to illuminate something obscure (immortality) by something still more obscure (God). To question the *existence of God* is, as we have seen (p. 131), quite *absurd*; He existed earlier and more really than we ourselves. But we cannot at all know His *nature*; we can only describe it analogically, allegorically, and anthropomorphically. It appears to us, therefore, an

endeavour equally vain and presuming to judge of His purpose in the universe, *i.e.* to judge of what is conformable to His love, goodness, wisdom, and justice. Here the old error always reappears—that for man's sake the world was created: an obviously ridiculous self-deception. The purpose of the world we can find only in the world itself, its own existence is its aim; our task lies in this, to search into the aim of *our own* being, in the first place ethically and then metaphysically, but at the same time in connection with the whole. With this is connected the argument, derived from the dignity and nature of man. Man, it is said, has so many splendid endowments which very seldom reach their full development here on earth, that it follows that they must develop in a future state. But would not the immortality of plants and animals follow from the same argument? How many millions of germs and blooms never fully develop! We deplore it, but nature is an extravagant housekeeper. Or if it is said that we all have a *longing* for a better existence, as is attested by the almost universal belief in immortality—still this proves nothing. For no being wishes to be annihilated; and the nations have for centuries given their adherence to many widespread errors. There is just as little stringency in the *ethical* arguments. If, as Kant thinks, no man can be *holy*, and thus no man can completely fulfil the moral law, this is to be regretted; but it may be asked if its fulfilment can be demanded from man since it is impossible. The other proof for immortality, which is derived from the necessity for a *correspondence* between virtue and happiness, or wickedness and punishment, is shown to be *untenable* by the refined moral consciousness. For

virtue brings with it its own reward; and a man who only does right from fear of hell stands on a very low moral level.

Let us now shortly bring together the *speculative* arguments. X

(1) In the first place, it is inferred from the insurmountable gulf which for human thought separates *being* from *non-being*, that nothing that exists can be *destroyed*. Then if the soul exists, it must also be immortal. (2) Next to this *ontological* proof comes the *metaphysical* one from the nature of the soul. Since it is simple, immaterial, and entirely opposed to the body, it can be destroyed in no other way than by an intentional act of annihilation of God. But this would contradict His goodness. But it tells against the *ontological* proof that we can as little *imagine* the transition from non-being to being. Yet this is assumed by *Theism*, which holds that God created the world out of nothing. And what should we be profited by mere continued *existence* if, as Hegel and his school teach, our individuality rises and sets in the 'Absolute Idea'? Certainly, as is rightly asserted by *materialism*, it does not completely disappear. But neither alternative is a solution of our question; whether continued existence is promised to us by materialism, as an atom amid material change, or as a point through which the world-soul passes in its dialectical progress. The *metaphysical* proof, which has been developed by Plato, Leibnitz, and M. Mendelssohn, has been acutely criticised by Kant. He thinks that the soul has *intensive* though not *extensive* magnitude; that consequently its reality can, by a gradual relaxing of its forces, be changed into nothing. But this objection of Kant's

only touches *consciousness*, not the *substance* of the soul. And although it may be admitted that in old age there is a great decrease of consciousness, it yet appears that no single psychical development ever entirely disappears, as, *e.g.*, the speaking of a foreign and long dis-used language has often been observed in delirious patients. Against the *simplicity* of the soul, Kant observes that this is only unity of the consciousness (of the Ego), and therefore an illusion; consequently, that which we may infer from it is also illusive. We have, however, seen above (p. 74) that the *Ego* is certainly a product of consciousness; but the unity of psychical force has been admitted as a *fact*. We have no right to confound the *unity* of the soul with *simplicity*. All understanding, judging, concluding from premisses, all sensation and volition, exhibit themselves as syntheses of manifolds. The soul must therefore be thought as a spiritual manifold, though we may not be able to represent its divisibility.

As has been shown, it is evident that neither the arguments from belief (the analogical, teleological, theistic, and ethical), nor the arguments from knowledge (the ontological and metaphysical), have sufficient demonstrative force. It is only the last, the metaphysical, which we shall further consider.

Upon questions concerning the *specific nature* of the world to come we do not propose to enter. Besides the fantastic character of such speculations, we should be giving a handle to those who disbelieve in the immortality of the soul. For people either assume (like the Christian dogmatists) a resurrection of the body, and then some would object that the other world would take the form of an idle repetition of this earthly life; or

else they deny corporality to those who rise from the dead (*i.e.* deny to them sex, temperament, capability of suffering hunger and thirst, heat and cold, &c.), and then objectors would say men would be pure spirits—and how many would there be able or willing to enter such a philosopher's paradise?

For us, the important question is, Can we, on the assumption we have made (p. 149), that there is no force without matter, the soul being therefore the immaterial *counterpart* of the body—can we maintain immortality? The *eternity* of the soul as a part, or self-manifestation of substance, is indubitable; is this also the case with regard to its *personal continuation*? The reciprocal action between body and soul, even an admitted dependence of the latter on the former, would be no argument against it. For the soul, like every force, is to matter as subject to attribute, it possesses decidedly higher *reality* than matter. Further, we must not be misled by the *imbecility* often seen in old people. This need not be the token of the *dissolution* of the spirit or mind, but may only indicate the cessation of its *conscious* manifestations. For we perceive late in the day, or when we are indisposed, or after strenuous thought, a weakening of our mind, but we do not fear that it is diminished thereby. When therefore in death *consciousness* undoubtedly ceases, the annihilation of mind does not in the least follow therefrom. Rather in the progress of life, consciousness turns itself ever more from the world of sense to its own internal world. The old man lives almost entirely in memory, what is new does not interest him, he can neither comprehend it nor keep it in mind. Whilst, *e.g.*, Kant, in his latter months, could not express himself intelligibly on the

commonest things, he gave suitable answers to questions concerning erudite matters.

Since then the soul, as shown above (p. 140), is a force which is not *produced* by the organism, but, on the contrary, rather conditions and supports it, it cannot be annihilated by the corruption of the body. On the contrary, whatever the materialist may assert concerning the material forming the organism and the passing of the chemico-physical forces into other (inorganic) combinations after their dissolution, it is quite *impossible* that psychical force can perish. It follows that it has not *arisen* from a combination of elementary substances, for no *force*, but only *exhibitions of force*, can *spring afresh* into existence (p. 128). It by no means follows from this, however, that *persons* are *immortal*. For personality appears to be bound up with the organism, especially with the co-operation of the nervous system. Therefore we can only concede personal continuation on condition that we receive again the same, or at least a similar *body*. Whether this is *possible*, *faith* alone can decide.

PART II.

THE MENTAL FACULTIES.

§ 10. SUMMARY.

61. What do we understand by mental faculties? Since, according to what has gone before, the human soul is a substance which as personality animates the body, *parts*, in an extensive sense, cannot be ascribed to it. We therefore reject the old division originated by Pythagoras, into vegetative soul, sensitive soul, and intellectual soul. But we do speak of mental faculties in the sense of *self-activities*. For as everything in spite of its unity displays a multiplicity of properties, *i.e.* kinds of reciprocal action with other things (p. 122), we must also acknowledge such constitutive properties in the soul. Certainly it is a *unity* (p. 72), but not a *mere homogeneity*; ideas, feeling, and will are expressions of *the same soul*, but at the same time are distinct. Plato founded his theory of different parts of the soul upon an argument from the variety of mental phenomena to a similar variety in the subject of these phenomena (*Rep.* iv. 439 B.); and likewise Aristotle, who also points out that his parts of the soul are for thought only different relations of the same substance; for the rest it is doubtful whether he considers them as mere coexistent *possibilities* or as *stages of development*. The

Aristotelian doctrine prevailed all through the Middle Ages, and even with Kant, who on this point quite agreed with Wolf (*Psychol. ratio.* § 388, 742). He even, by his sharp limitation of individual faculties, obscured their mutual connection; he understood them as an aggregate and not as a system, and he substituted everywhere a reciprocal action of faculties for a reciprocal action of states. (*Werke*, ii. 16, i. 287.)

Herbart and Beneke first opposed this theory, the former on metaphysical, the latter on psychological grounds. But the arguments brought forward by them and others do not affect our view (cf. Qs. 20 and 21).

Moreover, *other* theories admit of even graver doubts. The Hegelian conception of Psychology as a dialectical history of mental development is, in the first place, an *inappropriate* description. For *development* indicates the change either of an individual as it passes through different stages of organisation (*e.g.* an embryo), or of one and the same organ in different species of individuals. Thus one might designate Psychology as the history of the development of psychic life; but the faculties of the soul are by no means the dialectical stages of the soul, because they do not follow one another *historically*, but exist *side by side*. The soul does indeed pass through a course of development, but not a dialectical one, and it is always the mind or spirit *taken as a whole* which does this. The only difference between these 'stages of development' and 'faculties of the soul' is that the former seem to receive life through the advent of soul (though indeed soul itself is again reduced under logical schemata).

The other theory, now very prevalent, the *theory of ideas*, falsely comprises all psychical phenomena under

the head of different manifestations of ideation. But this method, already attempted by Descartes (*Médit.* III. p. 29) and Leibnitz (*Opp.* p. 251 a. 271 b.), is obliged to return again to the despised faculty theory.

62. What course will our discussion follow? Our Ego first becomes conscious of itself in *ideation*; we will therefore in the first place treat of this. But since ideation is brought about by *sense-perception*, we have first to examine *sensation*. To this succeeds the discussion of *feelings* and of the phenomena of *desire*.

§ 11. SENSATIONS.

63. What is a sensation? By sensation we understand the state of the soul which is due to a nerve-stimulus.

'Sensation' signifies an internal affection, and is thus opposed to the nerve-stimulus which comes from without. Like so many words of similar formation (*e.g.* action, production, &c.), it indicates both a state and an activity. It is agreeable to our metaphysical view to retain both implications. For everywhere, as shown above (p. 123), a *state* involves *activity*, and indeed *reciprocal action*. Thus the question whether sensation is action or passion is obviated. It is *both*, since nowhere in the world is either action or passion isolated.

64. How does sensation come about? The beginning of the process is an *external* stimulus which is regarded by natural science as a state of movement of ponderable or imponderable matter (p. 125). This stimulus touches a *part of the body* susceptible to it and acts either by the movement, *unchanged*, affecting the

nerves (as in sound and light), or it operates by *change* (as in the stimulus of warmth). From this arises a physical *state of excitation* in the sensory *nerve-fibres*, which state has no kind of similarity either to the external stimulus or to the sensation. This excitation is propagated further to the *brain*, the central organ, where it again *undergoes a change*. Finally, the purely *psychical* state which is thereby caused in some occult manner is the *sensation*. It is thus an activity of the *soul* caused by nerve-stimulation.

We have already seen (p. 85) that physiology is *not* able to explain it. The old psychology explained sensation as an influx of the object into the subject. Thus Empedocles (*Arist. de div. somn.* 2) thought that certain constant effluences of things penetrated through the pores into the bodily organs, from which again similar streams came to meet these effluences. Democritus and Anaxagoras held a similar doctrine. Aristotle, on the other hand, recognised that the real activity of the object and that of the person having the sensation are in fact blended into one, and only distinguishable in thought (*De An.* iii. 2. § 7). For the motion propagates itself only *as far as*, and not *in* the soul, which receives only the form, not the matter of the object; and receives this by an act of formative activity on its own part. Plotinus remarks, very much to the point, that in sensation only the body is passive, but the soul is active, since for it sensation is a *becoming conscious*, a beholding. The schoolmen combined the views of Aristotle and Democritus, and taught the doctrine of a crude physical influence (*influxus physicus*) of things upon the soul. According to *them*, corporeal images of very fine matter, which are

continually being detached from things, penetrate through the hollow nerve-tubes to the seat of the soul (*sensorium commune*). There they produce certain constant impressions, which we call memory. Descartes, on the contrary, while rejecting 'physical influence,' imagines that the stimulation propagates itself from the organs through the nerves to the brain, there sets in motion the animal spirits which rise from the heart, and thereby effect sensation in the soul; he also taught that the sensation has no similarity to the object causing it (*Médit.* iii; *Princ.* i. 66; iv. 185). In opposition to the sensualists (cf. ante, p. 36 seq.), Leibnitz laid stress upon the activity of the soul (*Opp.* 196, 227); he derives sensation, which to him is naturally only an evolution of the monad, from elementary and in themselves obscure perceptions (*Monad.* 13). Kant attributes intuitions to the wholly passive faculty of sensibility; it gives to the idea (phenomenon) the empirical material, which receives form from the pre-empirical force of the subject (*Kritik der reinen Vernunft*, ii. 31). But apart from his unjustifiable separation of form and content, Kant involves himself in the contradiction of forbidding the application of the notion of causality to the 'Things-in-themselves,' while yet he supposes the material of sensation to be produced by them. Later philosophers conceive sensation as an inner subjective manifestation of the objective process of molecular motion in the nerve-fibres. This is the view of Wundt, A. Lange, H. Spencer, and others. Lange formulated this view (*Geschichte des Materialismus*, ii. 423) in the following propositions: (1) The world of sense is a product of our organisation; (2) Our visible (bodily) organs are like all other parts of the phenomenal world

—only ectypes of an unknown object ; (3) The transcendental foundation of our organisation remains for us as much unknown as are the things which influence it. We have before us always only the product of both.

N.B. It is obvious that the view taken as to the origin of sensations is of the greatest influence upon the theory of knowledge, and is very closely connected with the idea of the nature of the soul.

65. How is sensation determined ? All sensations have some *content*, a certain *strength*, and a *form* peculiar to themselves, which is called the *tone* of the sensation.

66. What is the content of a sensation ? Since two factors belong to every sensation—a subject and an object—so the sensation will be different according to the object that is perceived by the subject, and according to the *specific energies* of the sensory nerves. The *qualitative determination* of the sensation corresponding to the stimulus is called its *content*.

We saw above (pp. 165, 166) that the content of a sensation *corresponds to* but is not *the same as* the quality of the stimulus. From this the fact follows that this content is by no means determined by the quality of the external object merely. Rather the same sensation corresponds to different stimuli ; just as different sensations correspond to the same stimulus. Thus the same sensation of colour may be called forth by waves of light, by pressure on the eye, or by electrical action. *Qualitative* difference of sensation corresponds to *quantitative* difference in the kind of excitation. Even the want of external stimuli is somehow perceived ; with closed eyes we see a black surface, with absolute stillness around us we have sensations of sound in the ear

—apart from subjective sensations of sound and sight. For since the nerve-fibres are most closely connected with our organism, they are always affected in some way or other. Thence, when stimuli *cease*, there arise after-images in the eye, and echoes of sense in the other organs. Thence also the *continuity* of sensation, whilst the stimulus is interrupted (cf., e.g., shooting-stars, &c.)

The *locality* of the stimulus is perceived as little as the quality of the external thing; our consciousness declares nothing about the extensiveness of the retina, or of the physical stimulus. This is a strong proof of the substantiality of the *soul*. What we call *properties* of external things are only our own projected sensations, which, indeed, are caused (in part) from without.

We find in Democritus an inkling of this truth and the Sceptic Pyrrho based his system upon it. So also Locke, Hobbes and Hume, Kant (*Kritik der reinen Vernunft*, iii. 205) and all later philosophers have directed attention to it. Helmholtz rightly names sensation the ‘symbol of the external world.’ For the rest, how *manifold* the content of sensation is, is shown by the circumstance that Herschel estimated the number of shades of colour in the Roman mosaics at 30,000. Our ear perceives ten octaves, thus (if we reckon quarter tones), about two hundred and eighty qualities of tone, to which must be added many differences of timbre and many unmusical noises.

67. In what does the strength of the sensation consist? By the *strength* of sensation is understood its *quantity*, i.e. the energy with which its content reaches our *consciousness*. This does not by any means increase in proportion to the intensity of the *stimulus*, but its

arithmetical increase corresponds to the *geometrical* increase of the stimulus. That is, as soon as the sensation has reached a certain strength, it is no longer strengthened in the same proportion to the stimulus. This probably comes from the intensity already attained, as well as from the different quality of the stimulus, which always encounters a condition of the nerve-fibres to some extent unfavourable. Thus their condition offers a resistance to the stimulus which increases as the stimulus increases.

As important factors in connection with strength, we must mention attention, the duration and extent of the stimulus, the freshness and development of the organ and the position of the stimulated part. Continued *attention* does not, indeed, increase the strength of the sensation, but it keeps it at the point it has reached; the *duration* of the stimulus has the same effect. The *diffusion* of the stimulus over a wider surface only increases the number of the individual stimuli. In all these cases there arises the delusion that the *strength* of the sensation is increased.

In general the sensation of brightness, or sound, or pressure increases with the increase of the stimulus, until dazzling or pain intervenes. All stimuli must have reached a certain strength in order to be perceived. On the forehead, the temples, the eyelids, and the back of the hands we feel a weight of $\frac{2}{800}$ gramme or $\cdot 00022$ drachm; on other parts of the body not less than $\frac{1}{80}$ gramme or $\cdot 0007$ drachm. The ear perceives the fall of a cork weighing 1 milligramme ($= \cdot 015432$ drachm) from a height of $\cdot 0394$ inch upon a glass plate, when the ear is distant from the centre of the plate $2\cdot 167$ inches in a horizontal direction, $2\cdot 915$ inches in

a vertical direction, and 3.58 inches in a straight line. As to the pitch of notes, from 20,000 to 30,000 vibrations in a second are audible. Very high notes are more effective than very deep ones; thus the shrill call of the boatswain is heard above the storm. *Red* rays have the slowest vibrations, therefore they become invisible sooner than blue ones. The same number of vibrations which changes the keynote into its octave, does not suffice for raising this to the next octave. Thus, in the fourth octave the vibrations are $2^4 = 16$ times as frequent as in the keynote, in the fifth $2^5 = 32$ times as frequent. The same is true as regards heat, light, and pressure.

Weber's Law depends upon this; the law has been reduced by Fechner to the following propositions: (1) The higher a sensation is in the scale, the greater must the quantitative alteration in its occasioning stimulus be, in order to produce the next higher degree of sensation. (2) The difference of sensation remains equal when the relative difference of stimulus remains equal.—Whilst Weber has only proposed his Law for weight, pressure, and length of stimulus, Fechner extended it to light, sound, and distance. In sensations of light the stimulus must be raised by $\frac{1}{100}$ of its intensity before the difference is perceptible; a sound must increase by $\frac{1}{3}$, and a pressure the same. In weights the capacity of discriminating is much more delicate; here an increase of $\frac{1}{40}$ in the original weight is sufficient to be observed. In temperature a difference of $\frac{1}{6}^{\circ}$ Réaumur is perceived in liquids by dipping the hand in. For the rest, Weber's Law is of value for the whole mental life, as is particularly apparent in phenomena of contrast. Light appears much brighter to a

man who comes out of darkness, a penny is of more value to a poor man than to a rich one, &c. As regards the place stimulated, Wundt asserts that intensity of sensation is in proportion to distance from the stimulated part. But more exact proof is wanted for this.

68. What is understood by the tone of a sensation? Tone of sensation means the agreeableness or disagreeableness produced in consciousness by the amount of harmony or opposition that holds between the sensation-stimulus and the general vital conditions. The tone of a sensation is thus its *power of affecting* the whole vital process. If a sensation calls forth a temporary *furtherance* of this, it is *agreeable*; if we find ourselves in any way *hindered* by it, it is *disagreeable*.

We have already seen (p. 168) that our nervous system is always in a certain *frame or temper*; this naturally offers *resistance* to a change of nervous condition. Whether such change is felt to be pleasant or unpleasant depends on the furtherance or hindrance of our whole condition which is called forth by the new stimulus. There are many nerve-fibres which appear less compliant than others; in some cases every alteration of tone appears as *pain*, whilst in others it springs only from long-continued intensification of what is disagreeable. This is the case in pressure, warmth, and the muscular sense, while with the eye and ear pain does not arise until their functions are in danger. *Abnormal* conditions either increase the tone (as in hysteria) or diminish it (as when ether is administered).

The *definiteness* of the content is in inverse proportion to the *strength of tone*. The *noblest* senses (eye and

ear) show less tone with definitely marked quality; the *lower* senses (smell and taste) do the opposite; and of what are called the *sensitive* senses, *touch* is distinguished by clearness of content, *organic sensation* by vividness of tone. Of course, *no* sensation is absolutely *toneless*, just as none is without *content*.

Pleasure and pain have been explained *physiologically* by some, *teleologically* by others. Thus Hobbes (*Elem. Phil.* 25, 12) derived pleasure and pain from the relations of the stimulus to the motion of the vital spirits in the heart and nerves; Hartley, from the length of the vibrations of the nerve-fibres; Morell derives pain from the preponderance of active over reactive nervous activity. On the other hand, Leibnitz explained pleasure *teleologically*, as due to the sensation of some perfection in ourselves or others (*Opp. Phil.* 671, a); Mendelssohn explained the pleasure of sense as the idea of heightened perfection of the body; Hegel (*Encycl.* § 472) ~~designated evil as the incompatibility of what is with what ought to be.~~ Both theories are combined by, e.g., Hagen (*Art. Psychologie* in Wagner's *Handwörterbuch*), when he designates pain as the defence of nature against a superior hostile element, and therefore as a salutary arrangement for making the soul attentive to the dangers threatening it. Burdach (*Anthrop.* § 413) had already called pain the 'Warder of Life.' In our view also these theories should be combined.

Finally, it is hardly necessary to remark that *content*, *strength*, and *tone* are only *subjective* points of view in accordance with which we regard sensation, which is something *indivisible*. The *liminal value* of the stimulus, i.e. the value at which it begins to be perceptible through the emergence of the sensation in the soul, is called by

Fechner the *threshold* of the sensation or of the stimulus. This must (according to p. 171) attain a certain height in order to increase the existing sensation; it must pass over the *threshold of difference*. The threshold of sensation assures us of a certain degree of insensibility, and consequent independence of the innumerable small stimuli to which we are constantly exposed; the threshold of difference gives a certain steadiness to our sensations. The *liminal values*, i.e. the formulæ expressing sensibility for stimuli and differences in stimuli, are different, both in individual men and in the same individual, at *different* times and in *different* circumstances. Therefore the 'psycho-physical law' of Weber and Fechner cannot give any exact guidance.

For the rest, since the nerves cannot be continually stimulated in equal degree, but must *grow weary* after reaching a certain point, the 'law of the conservation of energy' does not hold for the soul.

69. What two kinds of sensation are there? *Organic* sensations and the sensations of the *special senses*. Both are brought about by the *sensory* nerve-fibres (p. 93), but *the former* by the nerves spread through the whole body and its interstices, *the latter* by the so-called organs of sense. Almost all the former end in the *spinal marrow*, the latter, after a short course, in the *brain*. The former may be called *organic nerves*, the latter *sense-nerves*. The former convey intra-corporeal excitations, the latter surface excitations.

We also distinguish *object*, *content*, and *tone* of a sensation. The *organic nerves* convey to our consciousness the state of our own body, while the *sense-nerves* are affected by the changes of the external world. The former are not so *clearly* defined as the latter, which

again are almost without '*tone*,' while the former are always accompanied by it. This is because the nerves of sense are *isolated*, and have not so much influence upon the state of bodily health as the organic nerves.

70. How does organic sensation manifest itself? Since our life is a constant series of bodily changes (breathing, circulation of the blood, change of material), which affect consciousness by means of the organic nerves, a *stream* of organic sensations of the most varied kind is constantly affecting the soul. To the combined impressions of all these contemporaneous sensations the name of '*systemic sense*' (*cœnæsthesis*) has been given. It makes known to our consciousness every moment, not only *that* we live but also *how* we live; *i.e.* whether all parts of our organism perform their functions rightly on the whole. Thus the systemic sense might also be called the *vital sense*, the *barometer of life*, the *corporeal conscience*, or the *physiological climate*.

On account of having such a manifold content, a certain *dullness* is present in the vital sense, which is only broken through when disturbed by organic feelings (whether *furthering* or *hindering*); such as difficulty of breathing, congestion, profuse perspiration, &c. This obscure *background*, from which the consciousness of a child only emerges by degrees, accompanies us through our whole life. It is formed by the general sensations of pressure, warmth, and the muscular sense, as well as by indefinite intimations from the special senses (taste, smell, &c.) Its continuity assures us on the bodily side of the permanence of our Ego; any sudden change in it affects *mental health* injuriously. In youth especially changes in the systemic sense produce *exaltation* or *depression*—we are at one moment exalted to heaven,

at another in the depths of despair. The systemic sense also affects the *temperament* very forcibly, since it conditions our *disposition*, our *character*, and even our *philosophy*. Finally, upon it depend the manifold obscure feelings, sympathies, idiosyncrasies, humours, moods, dreams and forebodings, which contribute so much to our happiness or unhappiness.

71. What may we assert generally of the special senses? The senses procure to us (as shown above, p. 174), sensations of external things by means of *special organs*, that conduct to the brain certain stimuli, which are, as far as may be, adequate and isolated. One may therefore compare them to the wires of the telegraph, or to the doors and windows of a house. These are the organs of touch, taste, and smell, of hearing and seeing. The sensations of the five senses are quite *distinct* from one another in kind and each has its own language. A blow upon the skin produces pain, upon the eye light, upon the ear noise. This fact has been designated since the time of Johannes Müller as the ‘specific energy’ of the senses.

This is explained either by the fact that the sensory nerves are in a condition of excitation, or by the nature of their peripheral and central ending. Since the former is the same for all nerve-fibres (Q. 46), only the second explanation can be accepted. If the *nerve* itself (not the organ of sense) be touched by the external stimulus, the specific sensation does not arise. The place where the optic nerve enters the eye is *blind*; cold is not perceived as cold but as *pain* by the nerve itself. Besides the five recognised senses, we may (especially when we compare the sense of touch with the others) distinguish three more—the muscular sense

and the senses of pressure and warmth. But they seem to us to be appropriately considered under touch.

72. What is the structure of the eye? The two *eyes* are the organs of sight. These are protected by brows, lashes, and lids, and cleansed by tears. The *eye-ball*, which lies in the orbit of the eye, is nearly spherical in shape, and on the front of it is a small convex protuberance (the *cornea*).

The parts of the eye are:—(1) The *hard* (or white) sclerotic coat, on the anterior side of which is the transparent *cornea*. (2) This surrounds the *choroid*, which in front passes into the *iris*; the iris contains in its centre the *pupil* which contracts in a strong light. (3) The *retina*, consisting of ten layers, is an extension of the optic nerve, which penetrates the posterior part of the eye like the stalk of an apple. It is probable that the change of the light-stimulus into sensation takes place in the *rods* and *cones*. The former serve for the discrimination of light, the latter for the perception of colour; and in such a manner that through each cone only *one* colour is perceived. In the *yellow spot*, the point of most distinct vision, there are only cones. Where the optic nerve enters is the *blind spot*, where there is no sensation of sight. (4) The *mechanism for the refraction of light*, which is embedded in the three cuticular layers referred to, consists (a) of the *vitreous body*, consisting of the vitreous humour and the hyaloid membrane which encloses it, (b) of the double convex *crystalline lens*, and (c) of the *aqueous humour* which is between the cornea and the lens. (5) The optic nerves join in the *chiasma*, but do not blend with one another. (6) The eye is enabled to move by six *muscles*, two of which belong respectively to each of the three optic axes.

73. How is visual perception brought about? The eye's specific energy is for light for whether the optic nerve be stimulated by light, electricity, pressure, or a blow, it always responds with a sensation of light. Since light diffuses itself rectilineally in all directions with enormous celerity (200,000 miles in a second), rays of light, which meet the eye in the form of a cone, must be collected again at fixed points of the retina. This is effected by the *mechanism for the refraction of light* (Q. 72 (4)). Since the visual axes from different points meet the eye at the so-called *optic centre* before they reach the retina, the retinal image is reversed. But the soul does not behold the image thus reversed, but each individual part of the nerve is stimulated by an individual ray, and from these the soul constructs for itself the image of the object.

It is self-evident that neither the quality of the *external thing* nor the *retinal image* are themselves seen (p. 177). For the soul, though it has sensations of sight, has not a psychic eye with which to see the processes in the physical eye. Thus we get over the difficulty which appeared to lie in the fact that we see *upright* and *single*, although the retinal image is reversed and double. In fact, originally we see neither right-side-up nor upside-down, neither single nor double, because we see neither figure nor size, neither the outline of objects nor their position. In truth we only see *white* light (composed of different kinds of rays) or *coloured* light (arising from the refraction and reflection of the rays); we only judge of the size, direction, and distance of things by the *judgments we form* as to the differences of colour, light and shade, as well as by the movements of the optic muscles.

This is shown by the evidence of the man born blind who was operated upon by W. Cheselden, to whom it appeared as if all objects touched his eyes; he could distinguish neither their figure nor size, nothing appeared to him solid, but everything much larger than it had appeared when he judged by the sense of touch. The same was the case with another blind patient, cured by Franz. He had no idea of perspective. All objects appeared to him quite flat, even the human face; he took a ball for a disc, a pyramid for a triangle, &c. It is the same with *infants*; they have to *learn* to see. For we do not *see* the *distance* of objects, but *estimate* it by means of optical adjustment, and in fact, objects appear to us to be *nearer* in proportion as the rays from them which reach the eye fall farther apart upon the retina, or as greater muscular effort is required in order to project the image clearly. *Direction* we only learn by the help of the 'muscular sense,' i.e. by the difference of the movements which the eyeball makes, to right or left, above or below. This movement of the eyes is very important; for it enables *changes* to be made both in the stimulus and in the place of stimulation. For thereby qualitatively different *stimuli* are successively applied at the same place, and the quality of the sensation is changed by changing the *part stimulated*, while the stimulus remains the same. That all the qualities referred to (size, distance, direction, figure, motion, and number) *cannot* be seen is obvious, because only that which we *feel* is seen. But this is quite *impossible* with many properties, e.g. distance (for it is equally contrary to common sense to talk of seeing distances and of hearing intervals of silence). And whence could numerous optical *delusions*

arise if not from our judgment?—The only things that we see then are *colours*. Now a colourless *glass prism* whose refracting angle is turned upwards, shows the so-called seven colours of the rainbow, violet (lowest), then indigo, blue, green, yellow, orange, and red at the top. The difference of these ‘colours of the spectrum’ is derived from the number and amplitude of the vibrations of ether; and in fact these amount in the *red* light to about 476 billions in a second, in the *violet* to about 725; the other colours lie between. Rays whose refraction is *weaker* than red and *stronger* than violet we do not perceive as light, but the former manifest themselves as *warmth*, the latter as *chemical* action. Moreover the notion *colour* embraces also black and white. For it is only the eye of a person in a faint that sees nothing, the closed eye sees black. White is not the sum of the ether-vibrations which appear in the light of the sun, but the sum of the three sensations of red, green, and violet, which stimulate separate elements of the retina and are psychically combined.

The difference of colours is broadly explained by the fact that the different lengths of the ether waves bring into connection qualitatively different parts of the nerve-fibres in the peripheral organ. At least it has been assumed (by Young and Helmholtz) that each of the cones and rods of the retina can perceive one only of the three spectrum colours (red, green, violet). On the other hand, we have the fact that to the *objectively* homogeneous illumination of the whole field of vision there corresponds also a subjective homogeneous sensation. Therefore Fechner assumes that *all* colours of the spectrum can be perceived by *each* optic fibre, and that this being the case when any colour is perceived, a

medium vibration is induced, corresponding to the elementary colours which compose the perceived colour. As regards *tone*, it is only powerful *dazzling* that induces pain, otherwise all colours are more or less *agreeable* to us. *Green*, which lies midway between the other colours, is the most agreeable of all. All are *simple* sensations, as are also black, white, and purple (although the latter can only be produced by the opposite poles of the spectrum), as well as green, violet, and orange. Thus we have seen that the content of all sensations of sight is colour, but this is only the quality of one of our groups of sensations. *Colour-blindness* (achromatopia), which deprives of the sensation for red or violet, results according to Young from disablement of the nervous element which is sensitive to red.

Among *forms*, those appear to us the most agreeable which permit the eye to make the easiest motions, such as regular figures, curving lines, and symmetrical shapes. The latter pleases particularly in the line of horizontal extension; what pleases most in the vertical direction is well-proportioned divisions, more especially if they are in accordance with the 'line of beauty' (cf. the human figure, the group of the Laocoon, the Sistine Madonna, Raphael's Transfiguration, &c.)

We consider the *significance* of the sense of sight in Qs. 75 and 78.

74. In what does hearing consist? What *stimulates* the sense of hearing is *sound*, i.e. the vibrating motion of matter. The *vibrations* proceeding from a sounding body propagate themselves on all sides in the form of waves (about 1,000 in a second), and by striking on the auditory nerves produce the sensation of *hearing*.

The ear is a still more complicated apparatus than

the eye. The *sound-conducting* part embraces the external and the middle ear; the former consists of the pinna or auricle, and the external auditory meatus which terminates within with the tympanic membrane. The *sound-perceiving* inner ear, or the *labyrinth*, is divided into the tympanic cavity, the cochlea, and three semicircular canals. The *waves of sound* which are propagated through the air to our ear, are now *received by* the auricle which is shaped somewhat like a tun-dish, and after repeated reflection are conducted to the *tympanic membrane*. This is thereby brought into corresponding vibrations, which it transfers to the *ear-bones* (the malleus, incus, and stapes). The stapes then sets in vibration the membrane on which its base rests, the *fenestra ovalis*, these vibrations cause a wave-like motion in the lymph of the *labyrinth* which stimulates the peripheral terminations of the auditory nerve (the organs of Corti and the auditory hair), and thereby the nerve-fibres. Of the fibres of Corti (about 3,000 in number), each one is in Helmholtz's judgment attuned to a particular tone, so that—as when a note is struck on the piano and its string vibrates, the only other strings that vibrate with it are those which have some elements in common with the note struck—upon this stringed instrument of the fibres of Corti, those strings only vibrate together which have some tone-elements in common.

The ear is without the *mobility* by which the eye changes its stimulus or its stimulated part; the ear can neither move successively from one to another of several coexistent stimuli, nor shut itself off from external stimuli altogether. But it is able by expansion or contraction of the tympanic membrane to change

the sensible impression *quantitatively*. The eye is always ready for the maximum of excitation, the ear is not; with it moreover different sensations do not blend into one as is the case with the eye. If a periodic vibration is *slow*, as in the pendulum, a rope that has been set swinging, and the like, we can perceive the vibrations by sight or touch; if *rapid*, it can only be indirectly ascertained (as, *e.g.*, by means of a sounding-board). But here the ear is able to apprehend the *duration, breadth, and form* of the movement.

(1) The time in which the motion takes place is defined conveniently by the number of times the whole motion is repeated in a second. This frequency, which is *objectively* measured by the number of vibrations in a second, is *subjectively* recognised by us as *pitch*. (2) The breadth (amplitude) of vibrations is subjectively perceived as *loudness*. (3) The form of vibration (in a straight line, a circle, an ellipse) is estimated subjectively as *timbre*.

For the rest, we do not directly perceive the direction of a sound, nor the distance, nature, or size of its source; these are predicates added to the sensation. We also project sensations of hearing *outside* ourselves (even the so-called internal sounds in congestions, &c.), at least so long as the *tympanic membrane* is capable of vibrations. It is obvious that *judgment* comes into play here. As regards *qualitative* variety of sound the ear has much greater capacity, and it perceives clearly three distinct *classes* of vibrations—tones, notes, and noises. The simple sound produced by vibrations of exactly equal periods is a simple *tone*; in notes we have associated several tones, the number of vibrations of which are multiples of the vibrations in the dominant

tone. They are therefore completely blended in sensation. *Noise* is produced by composite irregular sound-waves, and is thus a rapid alternation of heterogeneous sensations.

Whether notes are low or high depends on the duration of the vibrations (periods), or the number of vibrations in a second; and on this also, when several are sounded together, depends their harmony or discord. Between the keynote and the octave there are the following intervals of vibration (in sharps); keynote, 1; second, $\frac{9}{8}$; third, $\frac{5}{4}$; fourth, $\frac{4}{3}$; fifth, $\frac{3}{2}$; sixth, $\frac{5}{3}$; seventh, $\frac{15}{8}$; and octave, 2. All other notes are *discordant*. The notes employed in music have between 40 and 4,000 vibrations in a second, and comprise seven octaves.

The *strength* of a sensation of sound depends (1) on the intensity and amplitude of the sound-waves; (2) on the susceptibility of the organ of hearing; (3) on its condition.

The *timbre* of instruments is determined by the greater or less prominence of overtones. In every instrument (with the exception of tuning-forks, resonators, covered organ-pipes, musical glasses, and flutes) the ear hears with any notes besides the note itself a series of subdued overtones which have fixed relations to the fundamental. Thus, with *c* we hear the next higher *c*, (*c*₁), and its fifth, *g* (*g*₁), and the *c* above that (*c*₂) with its third, *e* (*e*₂), and fifth, *g* (*g*₂). For *c*₁ makes in a given time twice as many vibrations as *c*, *g*₁ thrice as many, *c*₂ four times, *e*₂ five times, and *g*₂ six times as many. With these *harmonious* overtones there always occur weaker *discordant* overtones, which make 7, 8, and 9 times as many vibrations as the keynote. From consideration of bodies giving forth sounds simultaneously,

Helmholtz holds that the ear perceives only a *pendulum-like* vibration of air as a *simple* tone, every other periodic motion of air it *analyses* into a series of pendulum-like vibrations, and perceives a correspondent series of tones.

As regards the pleasure-giving quality of sensations of hearing, it is certain that accordant tones cause *pleasure*, inharmonious ones *displeasure*; probably because the organ is striving after the most uniform vibration while it is being affected by a quick intermittent motion. Comparing sounds with colours, deep notes seem to have a kind of grandeur, like red, high notes to be restless, like violet, and elevating, like yellow. Violent rhythmical noises appeal only to robust natures, more delicate natures are painfully affected by them, as also by shrill sounds and irregular buzzing. All confusion makes an unpleasant impression in the same way that roughness does. But the ultimate reason of this lies in the *soul's* capacity of discrimination and of forming the *notion of harmony*, which is the chief element in beauty. Because harmony is perceived by *hearing* most immediately and distinctly, therefore *music* is historically the first art. It is so historically because it is physiologically and psychologically so. Its influence upon the human mind is well known. It operates most immediately, therefore it was employed in very ancient times by priests, teachers, and philosophers (Li-ki and Pythagoras) in order to restrain passion.

Acoustic deceptions often give rise to hallucinations. These arise from abnormal conditions of circulation in the brain and internal ear, from fatigue and weakness of the auditory nerve, and from noises which originate within the ear, *e.g.* cracking, clicking, humming, and tapping.

75. What parallels are there between sight and hearing? Both senses localise their impressions externally; both in themselves give no intimation as to direction, distance, and magnitude of the physical stimulus. On the other hand, both eye and ear can have qualitatively different sensations at the same time.

But their *divergences* are much greater. (1) Sound is propagated very much more slowly than light. (2) The scale of colours embraces about an octave and a quarter, but the gamut a whole series of octaves. (3) There are complementary colours, but not complementary tones. (4) In sight any sensation-quality can extend with a relatively small modification over complexes of any number of members; in hearing each quality is represented by a complex of sensations consisting of a number of members determined once for all. (5) In hearing there is no mobility of the outer organ, but there is instead a power of altering the tension of the tympanic membrane. (6) Sight is the most important sense for the formation of our idea of space, hearing in the perception of time. (7) The former has an active, the latter a passive, character. (8) Sight, on account of its lucidity, is of service to thought; hearing, on account of its indefiniteness, has a special connection with moods and feelings. The eye instructs, the ear moves. The effect of martial music is more impressive than that of a battle picture. Savages and children love dazzling colours, but soft music. (9) Sight directs man towards the external (the sciences, especially natural science, depend on it); hearing towards the internal. (10) Both sensations are accompanied by pleasure or pain, but hearing in a higher degree; therefore every sensation accompanied by

pleasure or pain is in general spoken of as *having tone*. (11) Hearing is more *convincing* than sight, for what we ourselves have heard we affirm with greater certainty than what we have seen. (12) Sight is egotistic, hearing social, for by it we apprehend *speech*, to whose formation it was indispensable.

76. What are the sensations of touch? By sensations of touch we understand those sensations (arising in sensory *nerve-fibres* which ramify over the whole skin), which are caused by *contact* with ponderable substances. Since these sensations (except at the tip of the tongue) are mediated by the skin, they might equally well be ascribed to a *cuticular sense*.

The nerves which serve the cuticular sense, or sense of touch, are, for the trunk, for the most part fibres of the posterior roots of the nerves of the spinal cord (p. 92), for the head on the contrary those of the posterior (or fifth) nerve of the brain with its three main branches. The true organs of touch are the *nerve-papillæ* of the skin, with their *tactile corpuscles*. The number of the latter is very different in different parts of the skin. They amount, in a square line, on the inner side of the first joint of the forefinger, to 108 (to 400 vascular papillæ), on the second joint to 14, on the lowest to 15, in the metacarpus to 8. The finger-tips and palms of the hands are richest in nerve-papillæ and tactile corpuscles. This has been shown by E. H. Weber's experiments. If the points of a compass be placed simultaneously on the skin, a person whose eyes are closed perceives them as *one* point in all parts where only a few tactile corpuscles lie between them. The smallest distances at which the points are perceived as two, are, at the tip of the tongue about $\frac{1}{30}$ inch, while

at the finger-tips it is about $\frac{4}{30}$ inch, on the lips about $\frac{8}{30}$ inch, and on the back somewhere about 2 inches. The tip of the tongue thus has a *sense of space* 60 times more delicate than the back. Moreover, the *delicacy* of this sense of space or position is not always *the same*; it is greater in children and delicate women than in grown persons and men. Weber supposes the skin to be divided into sensory *circles*, each of which owes its susceptibility to a nerve thread. These circles are smaller in the more sensitive parts of the skin than in the other parts. In order to perceive the compass-points as two, he thinks that sensory circles must lie between them. Many of them are oval, as in the arms and legs, for the compasses must be opened wider in the longitudinal than in the transverse direction.

Under the so-called sense of touch a whole series of different sensations is included, namely, the sensations of pressure and touch, muscular sensations, sensations of temperature and of pain. This analysis is an important acquisition of modern psychology.

The simplest reaction of the *cuticular sense* is the sensation of *pressure* or of *weight*. This is distinguished from the sense of touch by the fact that the latter brings to our consciousness the pressure directed *actively* against the object, whilst the sense of pressure *passively* receives the stimulus exercised by the object upon the skin. Therefore a *muscular sensation* is always joined with a sensation of touch. In connection with this we find that in touch only a small part may be concerned; in sensations of pressure large portions of the surface are involved. The *content* of the sensation is in both cases *pressure*.

In the first place our organs of touch can make

known to us the degree of *pressure* (i.e. the compression or tightening of the skin) and at the same time an idea of the *weight* of the body which exerts the pressure. But this sense of pressure is different at different places; thus, at the finger-tips we perceive the difference of weight between 20 and 19·2 ounces, on the forearm that between 20 and 18·7. The quality of the sensation depends upon the *degree of hardness* and the *local tone* of the part affected. What may be called the *colour* of the sensation corresponds to the normal condition of the member concerned as contrasted with anæsthesia and the disappearance of feeling (in sleep, freezing, and the influence of ether). That the sensations of pressure are very important for the formation of the ideas of *force* and *cause* is obvious.

Still more important for this is the *sense of touch* for in the resistance offered by bodies to the force we use, the consequences of our exhibition of force, activity and action, cause and effect, make themselves simultaneously observable. This is, as we have elsewhere shown, very important for the *theory of knowledge* and for *metaphysics*. The sense of touch has therefore been designated as the sense of *reality*, because it gives us information, not only (as the other senses also do) of the qualities of things, but of their existence. Its sensations tend also, like those of sight, to assume a *spatial character*, therefore E. H. Weber and Ludwig have also called this sense the *local sense*; and since we are able to touch *ourselves*, whereby the sensations of pressure and touch are discriminated, the cuticular sense thus itself becomes an object of perception. The regulative sense of touch stands in the same relation to sight as 'the pedantic teacher to the genial but frivolous

scholar' (Drobisch). Thus, though it is not wholly free from deceptions, it *controls* and *corrects* all the other senses (what can be grasped by the hand cannot be explained away). For it alone is our *body*, an object *different* from the things of the external world; it is it which, helped by pain (and pleasure), draws the boundaries which separate us from external things. As we can think of no object without tactile qualities, so we can imagine no subject without sensations of touch.

The sense of touch finds the greatest help in *muscular sensations*, *i.e.* those which correspond to muscular movement. Muscular sensations accompany tension and flexing of the limbs, whether the impulse proceed from the brain, or, as reflex movement, from the spinal cord, whether it be directed to the initiation, furthering, or inhibition of a movement, or to the taking up or ~~maintaining an~~ attitude.

The content of muscular sensation depends, (1) on the locality of the muscular group, (2) on the share taken by individual fibres in the contraction, and (3) on innervation. These different factors produce a rich variety of sensations; but from them arises also all that is uncertain, indeterminate in their character. They have therefore been appropriately compared to musical chords. How closely they are connected with the sensations of touch appears from this, that the limbs which are the richest in nerves are at the same time the most mobile. The strength of the muscular sensation corresponds to the mass of the innervation. By the muscular sense we can distinguish a difference in weight of $\frac{1}{40}$, whilst in pressure it is difficult to distinguish an alteration amounting to $\frac{1}{30}$ of the whole. Still we must not regard muscular sensation simply as

the sensation arising from *movement*, for both sensation and movement arise from the same muscular innervation. Thus the decrease in the muscular tension which follows on the emptying of a vessel is felt as a tendency to upward movement. We may point out, as exemplifying tone in muscular sensation, the constant bent of disposition in the muscular apparatus which makes motions downwards, to the right, or in a horizontal direction appear easier than similar motions when directed upwards, to the left, or in a vertical direction; with these are associated all kinds of influences from the whole bodily organism (breathing, beating of the heart, &c.), and from the mind (success, practice, expectation, &c.)

The *significance* of muscular sensations is very great. They interpose between sense-stimulus and muscular movement; they make the mind acquainted with the movement and position of a limb. They teach us the *figure* of any body which we grasp. Above all it is by them that our *conception of space* is developed; for we judge of the size, distance, and motion of an object from the sensation of the muscles of the eyes or the trunk. *Speaking* and *singing* also depend on this; for we could not voluntarily produce any different sounds and tones if we had not by sensation an idea of the different tension, position, and motion of the muscles in the glottis and the organs of speech. Further, we learn, by means of muscular sensations, how to give their *direction* to the other senses; thus seeing becomes looking—hearing, listening—and touching, handling. This *activity* comes from the relation which the muscular sensations have to the psychical impulse, being, as it were, a reflection and mirroring

of that impulse. And muscular sensation has a similar relation to *volition*. For while volition makes use of muscular sensation in performing an intended movement, volition itself increases; by the intensity of muscular sensation we measure the will. For the muscles are not serviceable merely in the productions of language and music, and in directing our organs of sense, but also for the realisation of our intentions and for the carrying out of artistic labours. By means of muscular sensations we keep our equilibrium in walking, dancing, &c.; we execute the skilful movements of writers, painters, surgeons, and musicians; and sensation is extended from the hand to the instrument which it uses (I feel, *e.g.*, at the end of my pen or brush; cf. the violinist's bow, the seamstress's needle, &c.) On them depend also the light and graceful movements of the gymnast, the ballet dancer, and the rope dancer.

The so-called *temperature sense*, *i.e.* the sensation of the raising and the lowering of temperature, has but small psychological significance. Its capacity lies between $10-11^{\circ}$ of cold, and $46-47^{\circ}$ of heat (Celsius). If the temperature sinks below or rises above these limits, the sensation changes into one of pain. Constant and moderate temperature is in itself not perceived *at all*, because of its correspondence with the warmth of our body. In general the sensation of warmth depends on the temperature of the skin at the time, the size and susceptibility of the surface of skin affected, and on the suddenness of the change. This is always felt as *unpleasant*, and a return to the previous temperature as pleasant. Cold becomes sooner unpleasant, warmth sooner painful; cold ends by affecting the heart, heat by affecting the head. Thence the symbolical

comparison of warmth with heartiness; warmth, it is said, is for the heart what light is for the eyes. Because the extremes of both are almost equally painful, excessive heat and cold are easily *confounded* with one another.

Now we come to the last class of sensations of touch, sensations distinguished as *painful*. Pain is acute displeasure, disagreeableness is chronic displeasure; the former comes as it were to a head in space and time, the latter is diffused and vague; the former exhibits itself in reflex movements, the latter as general uneasiness. Pain is produced both by *excitation* of the ends of the nerves and by the *stimulation* of their trunks, whether the stimulus be *mechanical* (pressure, a blow, pulling), or *chemical* (acids, alkalis, salts), or *thermo-electrical* (heat, cold, galvanism). On the other hand a nerve quickly *cut through* produces neither with nor after the scission any considerable pain. In truth each organ has its specific sensation of pain; that of the mucous membrane is burning, of the periosteum piercing, the serous regions pricking, &c. Still this difference disappears as soon as the pain becomes *violent*. When violent it is no longer *localised*, and thus becomes dismal and oppressive. Its *strength* is in proportion to the number of stimulated nerve-fibres and to its duration; if it pass beyond a certain point, *fainting* supervenes (insensibility). In this way the sensation of pain is distinguished from the sensation of touch, in that it *never* is projected, consequently an infallible mark for recognising it is the characteristic that it belongs to *us*, to our *body*. This comes from the fact that we can in sensations distinguish their *content* (definite character) from our own activity of feeling; on

the contrary, pain appears to be completely identified with the feeling of pain.

Any nerve, even if it be stimulated at different places, can produce only *one* determinately *localised* sensation of pain; and in fact we transfer sensation to the ends of the nerves whose branches and ramifications are dispersed over the periphery of the body, and this too when (as in amputation) the nerve-ends *are wanting*. This is obviously a psychical illusion. On the other hand, this localisation of the sensations in the limbs proves the presence of the soul in the *whole* body (p. 150); for it can only distinguish sensation *spatially* if it itself *exists in space*. And the sensations which simultaneously affect both body and soul, are the most intimate bond between the two. The soul is thus substantially diffused throughout the whole body, but *self-consciousness*, *i.e.* the knowledge that it does perceive, arises only in the brain.

77. What are the *chemical senses*? In contrast to the senses which we have already considered, sight, hearing, and touch, are the so-called chemical ones, *taste* and *smell*. For whilst the former are affected by mechanical processes, the latter are affected by chemical processes.

One can easily convince oneself that, in the former, mechanical stimuli operate, by means of a metal rod moved in the dark. For if we cause it to rotate slowly we have the sensations of pressure and touch and muscular sensations. With slow oscillation it gives forth a deep tone which becomes higher as the motion is quickened. An oscillation of one million vibrations in a second causes us to perceive warmth, and with 400 billion vibrations, the rod would emit a reddish light,

and would finally exhibit all the colours of the spectrum. Thus the *motion* of the same object would call forth all the sensations we have as yet considered. On the other hand, smell and taste are excited by *chemical* processes. Both are so far related that certain sensations which are sometimes ascribed to the one, sometimes to the other, are in reality *mixed effects* of both. Finally, both belong to the *mucous membrane*, which must be damp in order to receive the stimulus.

(1) *Smell*. Smell is called forth by the stimulation of the olfactory cells, which resemble the cones of the retina. The substances brought to them by inhalation must be in the *form of gas*, for fluid strong-smelling matters introduced into the nose are not smelt. The result is greater in proportion as more material particles are brought to the nerve by a quick stream of air. By holding in the breath, or by breathing only with the mouth, all sensation of smell is stopped. Even after the removal of the substance smelt, the smell still remains, either because small particles of it still remain, or as an after-sensation.

That what is smelt is very small particles given off by many bodies, is shown, *e.g.*, by *camphor*, for if a piece of this be laid on the surface of water, it pushes back the water immediately and lies in a hollow, and even begins to move *round*. The more powerful is this giving off of particles (as in musk, camphor, turpentine) the more quickly and widely does it diffuse itself; such volatile substances, however, vanish altogether. But what are called *fragrant* substances diffuse their particles only in the immediate vicinity. A warm and damp atmosphere is the best conductor. In smell as well as in hearing, continuous stimulation may have

either of two effects—it may increase the strength of the sensation or cause it to vanish altogether; a constant noise, *e.g.*, may become more and more intolerable, or we may altogether cease to notice it. In smell we cannot alter the quality of our sensation, nor voluntarily recall it. Therefore there are no composite smells, but each smell is unique. *Language* has thus no particular designations for smells; it names them, therefore, either after tastes (sour, sweet), or according to the substances smelt (smell of musk, cinnamon, rose), or according to the processes from which they arise (putrid, musty), or according to the sensations of touch thereby evoked (pricking, stinging). The multitude of smells is immense; almost everything has its own. On account of the qualitative indeterminateness of the sensations of smell, we confound them easily with organic sensations (of the nose, the lungs) or with sensations of taste or of the skin. The *strength* of the sense of smell in any one depends on the *extent* of the part stimulated, and also upon the *susceptibility* of the sense itself. *Practice* also contributes much to it, as is proved by savages, apothecaries, and doctors. Great as is the *power of tracking* which the sense of smell gives, and its convincingness, and great as is its importance in helping us to avoid injurious substances, it yet has, on account of its relativity, its indeterminateness, and its incapacity of spatial or temporal representation, but little *psychological* importance. Smells only recall to us previous states (*e.g.* the scent of a wood, incense, the smell of a dead body). Though of the highest importance for animals (*cf.* instinct), it yet possesses no *æsthetic* significance. Aristotle calls it the worst sense, Kant the sense we can best do without. Still it

pointed out that smells, because they are always connected with pleasure or pain, actively excite our *impulses*.

(2) *Taste* has been as yet but little examined physiologically. It is not known whether there is a special nerve of taste (the ninth cranial nerve), nor in what parts of the cavity of the mouth the organs of taste are situated; and as little is it known what properties confer taste on a body. This much is certain, that (with the exception of the galvanic current) only liquid and soluble bodies excite the sensations of taste. Finally, it is not known what sort of chemical nature determines taste; for bodies chemically different have the same taste (as sulphuric acid and acetic acid), and on the other hand, quite similar ones have a different taste.

Sensations of taste *vary*, both according to their source and according to the physical and psychical states of the subject. On account of their connection with the sensations of smell, touch, and warmth, they are easily exposed to changes. Still, sweet, sour, bitter, and salt are the fundamental qualities, which have been paralleled with white, yellow, blue, and red. As to *strength*, sour is in the uppermost place, sweet is the weakest (indifferent) sensation. The intensity depends on the excitability of the nerve, the number of the simultaneously excited nerve-fibres, the persistence of the stimulus, the condition and juices of the glands of the mouth, as well as on the contrasts of different tastes among themselves (cf. memory, expectation, discovered mistakes). Taste has little *psychological* significance. Important as testing and judging of the means of nourishment for the bodily life, it is hereby connected with instinct. But it is not indispensable either for *intellectual* or for *æsthetic* advance. The usual likening

of 'taste' to real æsthetic judgment comes from this, that the tongue judges certainly of what is pleasant and unpleasant. (For the rest it is true, *De gustibus non est disputandum.*)

78. How may the senses be divided? In the first place, the five senses just considered are distinguished into *simple* (touch, smell, and taste) and *compound* (sight and hearing); the former are affected *immediately*, the latter *mediately* by the nerve stimulus. (2) If we have regard to the *activity* of the sense, then sight, taste, and touch are placed far above hearing, smell, and organic sensation. (3) Those senses that apprehend *alike* in all, sight, smell, and touch, are contrasted with those senses that apprehend *differently*, hearing, taste, and the muscular sense. (4) As to the kind of stimulus, we distinguish the *mechanical*—sight, hearing, touch; and the *chemical*—smell and taste. (5) As to their importance for *knowledge*, (a) the *æsthetic*, sight and hearing; (b) the *objective*, touch and muscular sense; (c) the *subjective*, smell and taste. (6) As regards *tone* the senses form a series—sight, hearing, touch, taste, and smell. The *more objective* the sensation (*e.g.* seeing) the *more without tone* it is, but so much the less is it of service to knowledge.

As regards the substitution of one sense for another, nerves of organic sensation can take the place of the special sense-nerves (p. 176), *e.g.* the sense of pressure can take the place of sight, systemic sense the place of hearing. The often repeated question, whether we men could not have or get one sense more, is as idle as is the attempt to parallel our senses with objective elements or relationships of Nature, which was a strong point in *Schelling's* 'Natural Philosophy.'

§ 12. MOVEMENTS.

79. What is meant by movements of our body? Movements of the body arise from contractions of the muscles, which again arise from the stimulation of a motor nerve. Movements are thus, on account of their centrifugal direction, the counterpart of the centripetal sensation.

80. How may movements be divided? According as they arise from our will, from some psychical activity, or from a mere nerve-stimulus, we distinguish (1) actions, (2) reflex movements, and (3) instinctive movements.

The correctness of the principle of division becomes clear by the fact that many movements, *e.g.* trembling, weeping, laughing, may fall under each of the three divisions. Actions which are occasioned by the will we must consider much later; they presuppose reflex and instinctive movements.

81. How do reflex movements arise? *Involuntary* movements are reflexes of the sensations which come from without. It is believed that the stimulation of a sensory nerve (p. 93), at any point, propagates itself as far as the central organ (the brain or spinal cord), and passes over by means of a ganglion to the central termination of a motor nerve. Thus, these reflex motions which are concerned with warding off the approach of what is injurious, or utilising what is serviceable, come to pass without the co-operation of the conscious *soul*. Under reflex movements are to be reckoned the movements of the heart, of breathing and swallowing, coughing and sneezing, shuddering at the sight of

blood, sickness at the perception (or even the idea) of what is nauseous, laughing at tickling, weeping from pain, anger, and joy. Also the movements of unconscious persons, of those under chloroform, of the intoxicated, of sleepers, and of little children.

Even in these processes, however, the importance of the *will* must not be under-estimated. It can suppress coughing, sneezing, laughing, &c.; even mere *consciousness* represses reflex motions. And how much is done by *habit* (exercise, education, accommodation), is proved by musicians, dancers, and gymnasts (Indian jugglers even stop the beating of their hearts). Many rate the *purposiveness* of reflex movements too highly, *e.g.* Pflüger, who found in both parts of a decapitated animal special principles of reason, and 'reason in cat's tails which had been cut off' (Q. 47). On the other hand is the fact that the importance of the spinal cord is smaller in proportion as the organism is higher, and also that spontaneous and sustained movements of decapitated animals have not yet been observed. The *importance* of reflex movements is very great, in a physical as well as a psychical point of view. They maintain and protect the bodily life itself at the time when our consciousness does not watch over it, and they are the necessary condition of instinctive movements and of responsible action.

82. What are instinctive movements? Instinctive or automatic movements are such as are occasioned not by mere innervation, but *involuntarily*, by a *sensation*.

We have already (p. 191) seen the close connection of *muscular* sensations with ideas. We also acknowledged (Q. 55) *instinct* as the unconscious but purposive

self-conservation of the organism, by which is disclosed the existence of a purposive and plastic vital force.

The instinctive movements of men are the following:

(1) *Facial movements* which arise from *pleasure* or *pain*; thus the idea of agreeable food may produce incipient movements of mastication, and a taste which is disgusting may cause movements similar to vomiting. Laughing and weeping do not only arise from tickling and pain, but also at the sight or even the mere idea of a comical or painful situation of ourselves or others. A *blush* colours our cheeks and neck when we think we merit disgrace, or even when we are accused of a shameful action. *Savages* do not blush, but they grow pale from fear. Fright and joy cause stuttering. Apprehensiveness, shame, and haste cause habitual (even voluntary) movements to be awkwardly performed.

(2) *Movements of defence*. We instinctively close our eye when some body moves towards it; we move out of the way of a falling object, we even involuntarily lay hold of a falling body to keep it up. With these are connected:—

(3) *Concomitant movements*, which only arise from the movement of some other group of muscles. Thus with the motion of one finger another involuntarily moves; it requires an effort of will to lift it singly. The same is the case in the attempt to turn the hand round in one direction and the arm in another. Here also come in the *locomotive* movements, in walking, dancing, swimming, gymnastics, &c.

(4) *Mimetic movements*, which arise from the sight or idea of strange movements. Many yawn, laugh, and weep when others do so; persons with weak nerves fall into convulsions at the sight of them in others.

Spectators accompany the movements of players at ninepins and javelin-throwers; uncultivated people and children imitate the gestures of their interlocutors. With these are also connected the power of actors to laugh, weep, blush, grow pale, tremble, &c. at their will.

(5) *Associated* movements are shown in complexes of the most varied movements, which by habit, from being instinctive have become voluntary, or from being voluntary have become instinctive. Freedom and grace arise in this way, also skill in writing, playing, drawing, &c.

(6) *Speech* is originally only an instinctive movement. For as the usually dumb animal emits sounds when it feels violent pain, so uncivilised man, from his extremely sensitive vocal apparatus, must have involuntarily produced sounds in similar circumstances. Language originally consisted of gesticulation, and speech is for man as much an instinctive movement as building its nest is for a bird. Any noise in their vicinity, any disturbing movement of themselves or others, must have caused primitive men to utter *interjections*. Children and savages utter sounds continually; they sing when they speak; they only learn to be silent by degrees. Even the deaf, dumb, and blind Laura Bridgman, made a different sound for every fresh person she met. Above this lowest (exclamatory) step, language soon raises itself to be *onomato-poetic*. In the former case, sound was the *gesticulation* in which the sensation was reflected, in the latter it becomes a *symbol* for certain feelings and ideas. The passage from one step to the other is quite gradual. What was originally *immediate natural* sound becomes a *sign* (*i.e.* a word

in the strict sense), because in each person who hears it there is reproduced the sensation which the speaker has, and the contemplation of an object recalls the sound appropriate to it. A word therefore points out something real, and language forms a system of significant signs corresponding to the system of nature. In onomatopœia (imitation of sound) the hearer's sense is affected not only by the sound which he himself makes, but also by the sound which the thing to be designated emits. Thus in Greek βόϋς is the word for ox, cow; children speak of 'bow-wow' (dog), &c. Philology has very much restricted the number of onomatopoeic words; they have in fact cut the list down to about twenty. Related to these are the so-called sound-metaphors, such as hiss, sharp, rattle, swish, which express the impression figuratively. Poets and thinkers thus employ words for sound-painting with the intention of exciting certain feelings in the hearer. By means of these, the passage to the last step (characterising), is gained, where by the help of the roots already formed, each new percept receives a name. Thus, *e.g.*, in the Indo-European languages man is characterised as a *thinker*, a father as a *supporter*, the sun as *producer*, the moon as *measurer*. Imagination here carries on her infinitely varied play in all kind of tropes and figures, imputes to things three genders and produces a store of words which goes far beyond what is necessary. Thus, about 1,300 different words come from *one* Greek stem! We see how in the formation of language physiological, psychical, and logical forces intertwine, just as in the language of mute signs we distinguish reflex movements, and some gestures which are instinctively mimetic, and others which are purposive.

§ 13. IDEATION.

83. What is an idea? Aristotle has rightly said (*De An.* 3, 8) 'Ideas are like sensations, only without the fulness of sense.' They are, in fact, those states of the soul which sensations leave behind, which remain after the sense-stimulus has *ceased*.

In the case of the individual senses we learned to recognise after-sensations, (after-image, after-taste, &c.), which always become weaker and more obscure, without however wholly *disappearing* from the mind (from consciousness). These memory pictures are ideas (Qs. 36-38). Ideas are naturally *distinguished* from sensations, by inferior *intensity* and by their *independence* of external stimuli. The most vivid idea of a pain is weak beside the slightest real pain; the idea of a body is not plastic, that of a melody is dumb, of a picture colourless. Each one easily represents to himself, in the absence of actual impressions of sense, his room, his friend, his daily occupation.

84. How does an idea arise? We have observed above (Qs. 68, 74), that sensations are purely *subjective* states; colours, sounds, smells and tastes, hardness, weight, &c., are psychical states. But since they are *occasioned* by stimuli from without, we project them and ascribe them as properties to things. As soon as these projected sensations are *isolated* from the total impression of what is perceived, we form *ideas*. Ideas may therefore be defined as *isolated and projected sensations*.

A child sees and hears without having an idea of what is seen and heard. The diffusion of sensation (Q. 70) in a child at first prevents his arriving at the

perception of individual things. What is first isolated is whatever is *prominent* either from its *intensity* or from *contrast* with simultaneous sensations. By the help of the different nerve-fibres a man learns to *localise* his sensations (*e.g.* pain at the wounded place) and to *project* them, in doing which we are aided by muscular sensation (pp. 190-92).

85. What part is played here by attention? The sum of the sensations and ideas embraced simultaneously by *consciousness* (§ 7) is very great. Besides the organic sensations (Q. 70) we have, continually, numerous more definite sensations, which bring to us both from our body and from the external world all kinds of ideas. In addition to these there are many ideas which are not occasioned by sensitive stimuli, but are spontaneously formed by the mind from the ideas which it already possesses. That this multitude of ideas does not abrogate the *unity* of consciousness, has been shown above (Q. 39). It is true that these cannot all at once be held fast in the soul with the same strength; rather, since our consciousness, like the eye, can only grasp *one* quite *clear* and *defined* idea at once, all other ideas are for the time somewhat *obscure*; they are really *existing*, but only potentially for consciousness, *i.e.* they hover as it were on our *horizon*, or beneath the *threshold of consciousness*. *Attention* can only raise one idea at a time to the maximum of clearness (p. 61). If this idea be excited by the presence of a sensible object, it is *involuntary*; thus an illuminated body stands out conspicuous from a dark background, a moving body from a motionless background, a striking object from ordinary surroundings, pain makes itself to be felt above all other sensations. On the

other hand, attention is *voluntary* when it is determined by volition. All that *interests* us, *i.e.* that gives or promises pleasure or pain, excites our attention. It is through attention that an idea arises from a sensation; that the senses are sharper, that the eye not only sees but observes, the ear listens, the hand, the tongue, the nose become intelligent.

Voluntary and involuntary attention may be also designated as *intellectual* and *sensitive*; for the former is impossible without *conscious* effort. Little power as we have over our sensations and feelings—for we *must* simply receive and have them—still we are able by means of attention to *isolate* and to *fix* them. Thereby we exclude from ourselves both what is disturbing and distracting, and we also hold fast what is really of importance for us. But the ideas too, which (involuntarily) force themselves upon our consciousness, come into the soul only by means of attention; in the former case attention cannot be directed to the ideas except when it is not otherwise occupied. We therefore agree with E. H. Weber when he says, ‘In order that the idea of a sensation should arise, attention must be directed to it, whilst the sensation itself arises when we with all our might direct our attention to another object.’ Thus, in both cases *psychical activity* is necessary to ideation. And this activity consists chiefly in *distinguishing* ideas according to strength, content, and tone (Q. 65). Sensations themselves, of course, are what they are, but our *idea* is influenced by discrimination (comparison), as is shown in the case of complementary colours (*e.g.* white beside green is faintly tinged with red); and in spite of the closest attention we are not able to attend *multaneously* to two *different* sense-impressions, *i.e.*

to ideate both together. Thus, *e.g.*, no astronomer is able *at the same time* consciously to *see* the advance of a star in the telescope and to *hear* the beat of the pendulum, although his senses are simultaneously affected by the sensations of *seeing* and *hearing*. Involuntary attention (in sensation) is distinguished then from voluntary (intellectual) attention in this way, that the former only isolates the object from its environment, while the latter seeks for the qualities in the object; the former only observes *that* something exists, the latter *what* that is. Thereby we first recognise its figure, size, colour, &c. Now, if all things around us had the same colour, and consequently could not be distinguished from one another, we should not perceive any individual thing; thus, we find that the *objective* condition of *consciousness* is difference (determinateness) of things, and the *subjective* condition is *attention* (discrimination) on our part. The former, the objective determinateness of the external world exists for us only as *sense-impressions*; consequently *ideation* can only arise when the mind so *attends* to some one or other of its sensations as to *isolate* and to *fix* it. But since the sensations themselves are not altered by attention—the beat of the pendulum is not louder, colours not more intense when we observe them—it is only the *clearness* and distinctness of ideas that depends on attention (*i.e.* on the mind's power of discrimination). This is evident from the fact that we not only direct it to *existing* sensations, but also to *expected* ones.

That our *consciousness* arises from attention is shown by the so-called '*narrowness of consciousness*.' For, as has been shown, we are neither simultaneously conscious of different sense-impressions, nor do we know all that

we have ever done and suffered, said and thought; we must always recall things to consciousness *one by one*. Any *one* sense does not take in at once a *variety* of impressions. It is an illusion that we see a landscape at *one* glance; for the eye must by turning bring one point of the landscape after another upon the 'yellow spot' (p. 177). In the same way the mind must direct attention to one object in the landscape after another. When it compares two things it has not both at the same time in consciousness, but only (although quick as lightning) one *after* the other; even in general ideas (notions) where the word stands as a symbol (p. 204) for a complex of instances or properties, we must, in every case, bring these instances or properties themselves separately into consciousness (ideate them) with care and pains.

We have treated above (p. 81) of the *unity* of consciousness which exists in spite of all this.

How very much attention depends on *interest* is known by every speaker, orator, and teacher. What is absolutely new excites as little attention on the part of the hearer as what is completely known. The chief rule for teachers is, therefore, give instruction so that the interest of the scholar may awake and grow. The beginner must in the first place be encouraged by indirect interests, such as ambition, self-interest, &c., until by degrees interest in the subject itself is aroused. General want of interest proceeds from *want of cultivation* or from being *blasé*, *i.e.* it proceeds from being as it were a waste wilderness; incapacity to direct the attention to anything or to withdraw it, is a symptom of mental disease. As everything striking interests us, so *contrast* does; the hero of tragedy must not be too far removed

from us by his immaculate innocence (Aristotle, *Poetica*, 13); that tale interests us most in which we find *ourselves* (Göthe), for it is partly known, partly unknown to us.

86. How are ideas distinguished with reference to content? With reference to content, ideas are either *like* or *unlike*; the unlike again are *comparable* or *disparate*. Like ideas may differ as to intensity of ideation, e.g. the strength or weakness of the idea of the same object. *Disparate* objects are, e.g., such as heavy and white; they are, like the sensations of different senses, incommensurable. On the other hand, *contrary* ideas have in part similar qualities. The contrast between qualities increases in proportion to the amount of dissimilarity.

Since there are no negative sensations we cannot speak of *contradictory* ideas as in logic (cf. my *Logik*, p. 137).

87. How are simple ideas related to one another? Introspection teaches that our ideas are distinguished both as regards *clearness* and *distinctness*. Many *vanish* altogether from our consciousness, and of these many suddenly *return*. The foundation of this phenomenon lies in *attention* (Q. 85), i.e. the spontaneity of the soul. What *interests* it, it holds fast or seizes quickly again; what it is indifferent to it forgets. *Homogeneous* ideas it naturally takes up easily as being something known to it; *heterogeneous* ones are likely to excite attention at least momentarily.

The fact that former ideas suddenly return to consciousness, is simply explained by the fact that they have *continued* psychic *existence* (in self-consciousness), and attention is sometimes voluntarily or involuntarily *turned away* from the present and the reappearance of

freedom and clearness by *its own force*, just like a compressed spring.

If now, of the ideas in the field of consciousness, the weaker are dislodged, and all are obscured in accordance with their share of pressure, then each has reached its *point of equilibrium*. But *absolute rest* there will never be, for ideas are always in a state of *swelling and fluctuating, sinking and rising*. 'Our mind is very easily *almost*, but never *fully*, at rest' (Herbart, *Psych.*, I., § 74).

We remark in opposition to this complete 'Statics and Mechanics' of ideas: (1) It contradicts Herbart's fundamental view of the soul, in so far as this is itself a thoroughly simple, unchangeable Real (*Psych.*, § 203), whose means of self-conservation against the disturbances of other Reals are ideas. For how could simple, unchangeable Reals produce by their 'combination,' that which could not be imputed to them as individuals? The individual Real (soul) is supposed to produce nothing, not to express itself; can then its combination with others give the opposite result? (2) There can be no question of origin, continuance, rising, sinking, &c. of ideas, since ideas are supposed to be the soul's 'means of self-conservation,' which take place in the soul alone, and in fact merely as reacting to threatened disturbances! 'Disturbances are threatened; self-conservation wards off the disturbance, so that it cannot *enter at all*' (Herbart, *op. cit.* p. 169). The activity of the soul thus ends as soon as the disturbance is *warded off*, consequently all remains in the old way, nothing arises which could move or act. (3) We will attach no importance to the soul's being no place or space, which ideas enter and leave, and where they

might fight for their own hand; the adherents of the theory themselves insist that it is only *metaphorically* intended. But (4) further introspection shows nothing of that war of ideas, of their striving and self-suppression, but *external* influences (nerve-stimuli and sensations) occasion the change in our consciousness, whilst reflection is our independent unifier of ideas. (5) Even in *waking dreams*, when ideas appear to come and go of themselves, it is plain that it depends on the *interest* of the soul, and on its *mood*, so to speak, which of these comes to the front. Often it is precisely *weak* recollections which withdraw us completely from the energetic impressions of the present; consequently it does not depend on the strength of the idea, but on the interest of the soul, whether any idea, and if so which, is to overpass the 'threshold of consciousness.' (6) Further evidence against the theory is the well-known circumstance that we sometimes cannot *remember* some number, place, &c., and yet are conscious that we once *knew* it, and that on the other hand we can by an effort of will recall a weak idea that has disappeared. Both facts are inexplicable on the supposition that the stronger idea comes back to consciousness without our assistance. (7) We observe in ourselves a strife of *interests* (dispositions, impulses, endeavours) and *feelings*, but not of *ideas*; and the former too by no means contend *for* consciousness, but *in* consciousness. Their strife itself becomes an idea, which remains undisturbed in consciousness so long as that strife, or the interest in it, afterwards continues. (8) That a new idea is perceived obscurely does not depend on the *pressure* which the existing ideas exercise upon it, but on this—that our soul being occupied with other things, directs to it

little or no *interest* (attention). As little is the *strength* of the new idea the reason why it is perhaps clearly comprehended; on the contrary, a slight noise, an obscure idea of some danger or other, &c., often excites our highest interest. (9) The fact that in time our remembrance of persons, things, and events becomes weakened, is no argument for Herbart's hypothesis. It is not *time* that is the reason of this, for time is only another word for *occurrence*; but neither do the *ideas* alone suppress themselves and recall themselves to consciousness, but the reason is again interest, which is either directed to or diverted from them. (10) It is altogether a mistake to say that ideas remain what they are, and that it is only ideation that ceases. For either ideas remain *after* interaction what they were *before* it, and then they do *not* blend, or they blend, and then they must by interaction become something different. Further, the assertion that simultaneous opposed ideas join into one is refuted by experience, as may be seen by the white and black squares on a chess-board; but take their opposition away and then they are no longer opposed, *i.e.* the soul distinguishes them no longer because they *are* no longer distinct. (11) Then we must complain that this theory in a one-sided manner only takes into consideration the quantity, and not also the quality, of ideas. (12) Consequently it would have also to assert that ideas of themselves *free* and *separate* themselves one from another, as they associate and blend of themselves. (13) Again, if the fact be adduced that if we contemplate the same object for a considerable time, innumerable homogeneous ideas blend, this proves nothing, *since we are quite aware that we have many perceptions*

following one upon the other; only their *content*, the object, we ourselves conceive as identical, just because we are not able to divide it. (14) On this also rests the familiar experience that we *confuse* things, that we make mistakes in counting money, the crossbars in a trellis, and the like; it is not because the perceptions blend, but because we were not attentive enough, that there arises the error which we acknowledge to be avoidable, and which we very often do avoid. We may mention, as a case in point, that when a number of *flies* are buzzing about the room, we only know that there are *many*, without distinguishing one from another; we *could* easily do this if we *wished*, but we neglect to do it, not because the ideas of the flies blend, for in that case we should have the idea of only *one* fly, but because the question does not *interest* us further.

89. What is meant by *reproduction*? Reproduction is the return into consciousness of ideas which have been obscured. We may distinguish *immediate* and *mediate* reproduction; in the former, an idea appears to return of itself, in the latter it seems to be helped back by all kinds of aids, whether incomplete ideas or signs. *Immediate* reproduction joins together everything *homogeneous*, however far apart *in time*; *mediate* reproduction unites everything *contemporaneous*, however heterogeneous its content may appear to be. The former constitutes the *logical*, the latter the *mechanical* force in the train of ideas. *Immediate* reproduction is active in the creations of genius and scientific work, *mediate* reproduction is at work when we are engaged in customary occupations or careless conversation.

As special *laws* of reproduction the following may

be given. (1) *The law of similarity*; similar ideas reproduce one another. Thus a witticism, a melody, a person, may remind us of something similar. On this depends the effect of *metaphor* (images, similitudes, allegories). (2) *Law of contrast*: contrasting ideas, *i.e.* such as are partly similar and partly dissimilar, *call up* one another. Thus the beggar appears still poorer when he is contrasted with a millionaire; what we must renounce seems to us of all things most valuable. Upon the relation of contrast many *artistic* effects depend, as the distribution of light and shade, the alternation of the tragic and the comic, the effect of wit and irony. Extremes meet: 'du sublime au ridicule n'est qu'un pas' (Napoléon I.) (3) *Law of contiguity*; ideas which were contiguous in consciousness recall one another mediately, we easily unite what belong together in space and time. The idea of home recalls the idea of our parents, playmates, toys, of our whole youth. Ideas of sight and hearing also become associated together. (4) *Law of evolution*. This is a consequence of the preceding one; what has come into consciousness in a series we recall in the same manner. This law may be also called that of *succession*, for in every *series* of ideas (*e.g.*, *a, b, c, d, e . . .*) each initial member (*a*) reproduces the following, and each concluding member (*e*) the preceding ones, although with different degrees of clearness; each intermediate member (*b, c, or d*), has both predecessors and successors, it thus reproduces the preceding and the following ones in the series. The *evolution-power* of a series, *i.e.* the energy of its orderly development, depends both on the number and on the connection of its members. Thus the first word of a proposition, a

verse or a poem, calls up the following ones; the first bar of a familiar melody calls up the following bars. It is much more difficult to reproduce a series *backwards*; e.g. the multiplication table, the alphabet, or the words of a proposition. A plurality of homogeneous ideas (e.g., poplar trees, sheep, &c.) are reproduced as *groups*.

Even in Plato, (*Theatet.*, 191 C., 194 C.) we find the materialistic explanation of reproduction by *material residua*, which the Greek materialists described as scars or footsteps. Descartes and Malebranche speak similarly of 'material ideas' (corporeal species) described later by the English sensationalists (Hartley, Priestley, &c.) as vibrations of the nervous ether, or of molecules, by the French sensationalists (e.g. Condillac) as permanent dispositions of the nervous fibres or tracks worn smooth by the vital spirits. Beneke speaks of traces, tendencies, which by the addition of certain elements, are raised from sub-consciousness to consciousness, whilst Waitz again assumes *residua*, and Wiener furrows and scars of the brain. It is hardly necessary to say that we reject this materialistic explanation.

But as little can we use the theory of Herbart as an explanation of the *association of ideas*. For if (1) it be said that heterogeneous contemporaneous ideas grow together into one inseparable whole, against this we have the fact that we can easily detach individual perceptions from this whole, which we do not succeed in doing in the case of ideas and sensations which coalesce of themselves. Whilst thus, e.g., we cannot sever from the idea of 'spider' a feeling of horror, we can let drop this or that attribute in the general

notions, man, gold, &c. It is different in the case of correlated notions (cause and effect, and the like) and with those that depend on the fundamental laws of thought. (2) Other ideas, as round and angular, as well as all disparate notions (p. 209) are decidedly *opposed* to combination. (3) The individual man, as well as mankind generally, has by experience continually to rectify complex ideas by adding or removing some of the constituent ideas; this proves that these complex ideas do not combine *of themselves*. (4) The assertion that it is a universal property of ideas to *blend*, is evidently contradicted by the fact remarked above (Q. 88) that they all *obstruct* one another. (5) The formation of general ideas and general notions does not take place by any process of blending, but by the power of abstracting and synthesising possessed by the mind. A difference between psychological and logical ideas exists in our opinion only in so far as the former are the beginning, and the latter the result, of ideation. The *psychological* idea *changes* continually, the *logical* idea on the other hand is regarded as something *definite*. In both cases the *mind* is active, and active in accordance with the same laws of its nature, only in the former case *unconsciously*, in the latter case *with consciousness*.

For the rest we in no way deny, that often *without*, or even *in opposition* to our will, ideas are called forth by feelings and impulses, and *vice versâ*, or that they are *heightened* by fear, hope, love, hatred, passion, &c. Consider for a moment the ingenuity of passion; how sharp-sighted is hatred, how inventive love, how sagacious jealousy! All this does not proceed from the fact that ideas 'rise spontaneously' into consciousness and

spontaneously wax and wane, nor is it because they are 'blended,' but because the mind is in a state of heightened activity. Herbart's school, which contends so actively against mental faculties as mere mythological fancies (Q. 88), has here presented, instead of one soul with its different forces, the fantastic drama of countless infinitesimal souls which play their part on the psychic stage.—But as regards the '*association of ideas*' by means of which something '*occurs*' to us involuntarily, it is partly explained by the *interest* which we took and which we still take, in the ideas that occur to us and partly by the *logical* combination effected by the mind itself. Thus naturally the part must reproduce the whole, the effect the cause, the end the means, &c. The same is the case in the reproduction of *space* and *time*; it takes place because our mind *must* represent all things in time and space. The mind is now so *accustomed* to the formation of notions (*i.e.* bringing like qualities together in apprehension), that it feels a real *need* of grouping individual ideas into unities. But if this synthesis were to take place of itself, by the 'free force' of ideas, then any *one* perception must draw together *all* similar ones, which is notoriously *not* the case. In fact usually *no* association of ideas takes place when the mind is influenced by strong *emotion*. Further, the *kind* of ideas which occur to us depends on our *mood* at the time, and we might also *keep off* all intrusive fancies, by attending to *one* object. That one idea often arouses precisely the one that is *in contrast* to it (p. 216) follows from the peculiar nature of our cognition. There are many ideas which we really can comprehend only by help of their opposite, *e.g.* *rest* only as contrasted with movement, cause, not without

effect, spirit as opposed to body, &c. Because we are only able to conceive *correlated* and *relative* ideas by their *opposites* (as large, good, clear, rich, &c.), our mind has become so accustomed to this, that involuntarily, at the idea of rich, poor *occurs* to it, with the idea of round that of angular, &c. Finally the fact that energetic activity of the vegetative life (circulation of the blood, nervous activity, motion) favours the reproduction of ideas, is also in favour of our view; the mind (whose health is most closely connected with that of the body) exerts itself more vigorously and efficiently under such circumstances.

All the kinds of ideation that we have just considered are usually designated as special mental faculties. Thus memory, the power of imagination and thought, are distinguished from reproduction; thought again is analysed usually into quickness and profundity, powers of observation and combination, according as it is desired to make prominent the delicacy or the thoroughness, the concentration or the wide grasp of thought; finally, when will or feeling is taken into account, deliberation and tact are spoken of as special faculties. It is clear that all these are only sides of the faculty of ideation possessed by one and the same soul. On account of their importance we will however treat specially of memory, imagination, and thought.

90. ~~How is memory defined?~~ Memory is usually said to be the reproduction of ideas *unchanged*. Its chief merit therefore is *fidelity to fact*. This naturally depends on (1) the *strength* of the original apprehension, and (2) on the *repetition* of the same idea (*repetitio est mater studiorum*). Both these follow from *interest*, which we acknowledged above (p. 206) to be the root

of attention and of reproduction (p. 215). Here too, of course, as in all ideation, the physiological freshness of the organism is important. Thus the boy and youth learn more easily than the grown or old man, every one learns before meals more easily than after, in the morning quicker than in the evening, &c.

The *fidelity* of memory may be more exactly characterised as *retentiveness* when we have regard to the length of time, as *facility* when it reproduces quickly, as *many-sidedness* when it is able to hold fast all kinds of ideas. Undoubtedly one has the *best* memory for whatever interests one (from inclination for or against, or from hope or fear). On this alone depend the so-called *special* memories, for numbers, names, places, notes, &c. There are as many kinds of memory as of *interest*. Linnæus knew his whole nomenclature by heart, but learned no living language; W. Scott with an astonishing memory for places, could remember no numbers. In children memory is the first measure of intellectual gifts, in persons of good ability decrease of memory is a sign either of age or of mental disease. If we distinguish *memory* and *reminiscence*, the former would be involuntary, the latter intentional reproduction; the former the passive, the latter the active. Even Aristotle contrasted *μνήμη* and *ἀνάμνησις* (*De Mem.*, 1). If memory give way, remembrance fails, if reminiscence give way, power of recollection fails.

But that memory (and reminiscence) is no mental faculty, but the conscious self-activity of the mind itself, appears from the fact that it is impossible to have any ideas at all without it. For in order to form an idea there must be comparison and discrimination, which can evidently only take place if we have retained

other perceptions in our memory. Thus in seeing an object previously seen, in hearing a melody previously heard, the *perception* coincides entirely with the remembrance. Further, we always remember that only which has once been matter of *consciousness*; neither sensations (of sight, hearing, &c.) nor feelings, neither conations nor impulses can be recalled by us to memory, except in so far as they have come into consciousness as ideas. It is, therefore, quite indifferent to it whether its content belong to the past or to the present.

91. How does learning by heart differ from memory? Learning by heart is the intentional appropriation of ideas. It is thus a sort of voluntary *reproduction*, whilst memory is involuntary.

Kant (*Anthropol.*, § 32) distinguishes learning by heart into (1) mechanical, (2) judgmatic, and (3) ingenious.

(1) The *mechanical* simply connects ideas together in a series over and over again, without taking account of their contents. Still such unintelligent memorising, though it furnishes us with a faithful memory of things, does not give a very serviceable one; if cross-questioned it is dumb.

(2) Much more to be depended on is the so-called *judgmatic* learning, which depends not only on simultaneity and succession, but upon the likeness or homogeneity of ideas. Thus we keep a speech in memory by means of its logical connection, mathematical proofs by the necessary interdependence of their successive steps, histories and sciences by help of their reasoned relations of cause and effect. The passage from mechanical to judgmatic memory is made by means

of rhythm and rhyme, *e.g.* in the rules for the Latin genders and memorial verses (*versus memoriales*) in logic, or again in the exhibition of relationships in a genealogical tree. Of judgmental memory is true the reverse of the old saying: *Tantum scimus, quantum memoria tenemus*, as has been already rightly acknowledged in the educational system of Basedow. Even Descartes declared scientific deduction to be the best art of memory (*Règles pour la direction de l'esprit*, 7).

Cyrus and Cæsar were celebrated for their memories, they knew all the names of their soldiers; so was Themistocles, who wished for an art of forgetting, and Mithridates who knew twenty-two languages. The elder Seneca could reproduce 3,000 words repeated to him; Pico della Mirandola, Scaliger, Politianus, Petrarch, Thomas Aquinas, Hugo Grotius, Leibnitz, all knew an astonishing quantity by heart. Of Fox it is said that if the Bible were lost he could rewrite it. The English mathematician Wallis, not only remembered numbers of fifty-three figures but could find the square root of numbers of twenty-seven figures in his head.

(3) *Ingenious* learning by heart unites what is dismembered and heterogeneous in some skilful (and often humorous) manner, based upon the similarity and contrast of ideas. On this depends *memoria technica* (mnemonics or anamnæstics). It starts from a series of ideas which have become familiar in the mechanical or judgmental methods referred to, and by certain ingenious modifications converts this series into a means of remembering another series. Such procedure is either *symbolical* or *topological*; in the former case, for every idea that is to be remembered a sign (symbol) is found, in the latter a place is assigned to each in the series

chosen. Since *memoria technica* always requires many artificial helps, its value is very problematical.

The Greeks attributed the invention of mnemonics to Simonides (Quint. *Inst.* xi. 2), but Herodotus (ii. 77) rightly referred it to the Egyptians; later the Sophist Hippias of Elea was celebrated as a teacher of mnemonics. In the middle ages men had marvellous ideas about the mnemonics of the ancients, although Plato (*Hip. Min.* 386 E) and Xenophon (*Symp.* iv. 62) mention them with irony. Lully, Celtes, Giordano Bruno, and Peter of Ravenna tried to establish a system of mnemonics. Aretin worked at an art of forgetting. In later times, Hermann Kothe, and O. Reventlow were distinguished as teachers of mnemonics. The old symbolical method gave, *e.g.*, for the date of Charlemagne's death (814), pictures of an hourglass, a spear and plough, for 'a hero of the spear and of the plough died.' In Kothe's system numbers were represented by words and notions (1 = *t, d*; 2 = *u*; 3 = *m*; 4 = *r*; 5 = *s, sch*; 6 = *b, p*; 7 = *f, w*; 8 = *h, ch*; 9 = *g, k*); thus 814 would be expressed by 'Hüter' (guardian) which is also applicable to Charlemagne. But there is always a danger that mnemonic words may be too artificial, and therefore be themselves difficult to learn. Kothe has reduced mnemonic rules to three chief propositions: (1) Principle of reference of the similar or the heterogeneous to one another; (2) Principle of mediating remote ideas by help of invented intermediate ideas (bridges); (3) Reduction of numbers to letters (consonants).

We have directed attention above (p. 104) to the remarkable connection between the brain and the memory for words. But for the most part imbecility

does *not* accompany aphasia. Max Müller's examination as to the number of words in use with different people is interesting; thus a cultivated person uses from 3,000 to 4,000 words in order to express all his ideas; the Old Testament has 5,642, Milton 8,000, Shakespeare 15,000. Only 900 words appear in hieroglyphics, and an ordinary labouring man at this day uses at most 300.

The complaint often heard nowadays—that memory is decreasing in this scribbling age—is one with which we do not agree. For if there were really Athenians who knew by heart all Homer, the laws of the State, and the names of all their fellow-citizens (Xenophon, *Symp.* iii. 5), yet on the one hand these were exceptions, and on the other hand we moderns hold in our memory a countless host of details. The complaint is only true in so far as this, that the memory is injured by too rapid reading (especially of novels) and by too multifarious learning.

The Greeks marked their sense of the scientific importance of memory by calling *μνημοσύνη* (Memory) the mother of the muses. Spencer (*Psychology*, § 125) regards memory as instinct in process of formation, and instinct as memory that has become organic. For the rest, all *skill* is a sort of memory (p. 192); all physical proficiency consists in making our body an instrument which *plays itself* instead of one which is *played upon* (Lazarus, *Leben der Seele*, ii. 45).

That one only absolutely *forgets* what has been hastily taken into one's mind is shown by the return of 'long-forgotten' ideas in dreams, fever, clairvoyance, and delirium. Old people, for the most part, remember their early youth, although not the first years of their

childhood. *Forgetfulness* is generally due to distraction or want of interest. Forgetfulness of benefits arises from vanity, pride, or thoughtlessness.

92. In what does the power of Imagination (Fancy) consist? That *ideas* do not play their part in the mind according to their own inclination, as is taught by Herbart and his school, but that the *mind* does with its ideas as it pleases, is most clearly shown by Imagination. Imagination is a sort of reproduction (Q. 89), but a *creative* sort. It is so far in opposition to *memory*, that while the latter reproduces earlier ideas as much as possible *unchanged*, the latter *transforms* them. What would be a fault in memory is consequently a virtue in imagination, for here ideas should be reproduced *not* as they were, but *differently*.

The nature of imagination may be studied in *children*. In *play* they do, indeed, use real material things, but they transfigure them; the lifeless becomes living, the dumb speaks, laughs, and weeps. All that they have ever seen and heard they employ to create a world of imagination. But the boldest fancy of the child, as of the poet, has one *limitation*; *absolutely* new elements of thought it cannot invent. Thus its reproductiveness is not *entirely* creative, but partly transforming. For the rest we do not agree with the widespread view that imagination is stronger in *youth* than in age. The opposite is proved by the *tedium* to which youth is more exposed than age, and by the *sleeplessness* of age, which for the most part arises from the superfluity of ideas, as well as by the creative power of old artists and poets (Titian, M. Angelo, Göthe). It is only because the *emotional* life is richer in youth that youthful fancy appears *stronger*, whereas it is only *more*

excitable than that of the mature or old man. Upon the same foundation rests also the greater vivacity of the *feminine* power of imagination. For *artistic* creation is wanting almost entirely in women, and some great artists, poets, and thinkers have a melancholy self-contained nature.

As essential points in imagination we note primarily the following:—(1) It is the *creative*, formative power of the soul, whether its images of the external world be *borrowed* or *developed* therefrom. (2) Its pictures are always *temporal* and *spatial*, and (3) their psychical character is sensuous, *i.e.* connected with impressions of sense. (4) Imagination stands upon the *boundary* between the known and the unknown. (5) It is particularly excited by stimulation of the *sensory* nerves (wine, opium, coffee, &c.), as well as by particular *colours* (red and violet), *noises* (drum, pipe, trumpet, splashing, storm, rustling of leaves, &c.), *smells* (orange and acacia flowers). (6) Everything striking, grand, makes an impression upon it (the sea, rugged rocks, profound silence, loud noise, &c.) (7) But above all our *feelings* must be affected, whether the soul be comparatively quiescent or be moved by some emotion (love, fear, distrust, sorrow, religion). *Terror* alone is an exception, because it disturbs the whole ideational life of the soul, often even destroys it. We may compare with it the paralysing effect which too violent emotions exercise upon the imagination, confining it to a narrow circle of ideas. (8) *Understanding* and *reason* are not without influence upon imagination. The former leads to *clearness* (cf. Göthe's and Schiller's philosophical studies); the latter gives it wings and fits it to be the bearer of great ideas.

93. What influence has imagination upon the bodily life? In the first place physiological processes are hindered or furthered by it. In states of health and sickness, in waking and sleeping, our organism depends in many ways upon imagination.

It is well known that imagination may excite glandular activity; the idea of a sour fruit makes the mouth water. Imagined dangers quicken the beating of the heart. A vivid imagination often makes persons susceptible to infection; and on the other hand the sick may be cured by faith in their physician. Formative and purposive imagination is manifested in instinct, and in the restorative processes of nature. Imagination also nourishes and increases affections. Further, St. Vitus's dance and epilepsy are easily communicated to nervous persons. The belief that one has taken poison or laxatives often has the same effect as taking them. Perhaps the effect of homœopathy rests upon this. Toothache is often driven away by the fear of an operation.

Ecstasy also comes in here, by virtue of which many enthusiasts have counterfeited the sufferings, even the resurrection, of Christ. The holy Coleta of Ghent felt the pains of martyrdom, Margaret Ebner, Francis of Assisi, Catherine Emmerich (1814), and E. Lazzari (1853) received the stigmata. The sister of a person condemned to scourging is recorded to have had weals upon her back due to mere sympathetic imagination. A pupil of Boerhave's had to give up medical study because he contracted every sickness which he heard described.

A mere catarrh hinders imagination, concussion of the brain destroys it wholly or in part, movement of

the body helps it. Rousseau had to walk in order to think, Lenau and Mozart composed with most pleasure when moving, Xenophon and Göthe delighted in riding, Klopstock and Herder in skating. Aristotle recommended lively motion to tragic writers in order to get themselves into an emotional condition. Terror and joy have been causes of death to many people. In an agony of fear for his father the dumb son of Croesus spoke, and joy caused Conring to recover from fever, Meibom to speak, &c.

We shall defer the consideration of morbid psychical conditions.

94. How far does imagination influence the whole mental life? Since imagination, *i.e.* the faculty of purposive construction, is the very life of the human mind (p. 142), it will of course affect all departments of mind.

(1) Moods, feelings, and emotions. Its illusions spur on the feeling of anger, of vengeance, of jealousy, of fear, to terrible extremes (Lear, Buttler, Othello, Erbkönig). Imagination may arouse in us feelings of esteem, friendship, and love. It glorifies a person beloved, veiling his defects, and transforming him to such an extent that he seems almost divine. Again, each one loves in his friend an ideal picture of his own imagination. Finally, all happiness and unhappiness depend on imagination, for we are happy only because we believe (imagine) ourselves to be loved, esteemed, powerful, &c., or we are unhappy because we imagine the opposite.

(2) Volition and action are also conditioned by imagination in so far that they always arise from motives of pleasure or pain. But these again depend

on the idea of a past (thankfulness, regret), or a future pleasure or pain (hope, fear). Imagination alone holds forth to us the goal of our endeavours and enables us to seek for the means of its attainment. It shows us the different possibilities of action, so that we may come to a *decision*.

With this is connected the influence of imagination upon conduct. In the first place in its reference to education. Because it extends our horizon of the actual into the wide territory of the *possible*, it conditions all progress in culture. All instruction turns to it, for instruction works by *words*, *i.e.* conventional signs, which the pupil should accompany with ideas; but it is only imagination that can furnish him with ideas. In order to come to its help the teacher employs all kinds of images drawn from perception. For perception is very important in all departments of instruction. *Education* also needs the power of imagination, because if bad and low ideas enter, they poison the child's imagination; it is of the utmost importance to fill it with ideal pictures from history and story, life and poetry, in order to strengthen the child's power of moral judgment, *i.e.* to give it a criterion to judge by and an ideal to aim at. And in everyday life the exercise of our moral principles by practice is again dependent on imagination. And the presupposition of ethical action—freedom—is pre-eminently a matter of ideation; for our actions are determined by causes just as the events of nature; but our freedom consists in this, that we consciously will what reason teaches us to recognise as necessary. Again, sympathetic sorrow and joy are heightened by the power of imagination. This alone teaches us to follow the familiar maxim, 'Do as you would be done

by,' as a sure canon of morality. And if self-denial for the general good be undoubtedly the highest virtue, whence do we get the ideas of fatherland, of humanity, of the whole, but from imagination? What is the fatherland for which we are filled with enthusiasm? An idea. What is humanity, to the furtherance of which earnest philanthropists devote their property and goods, their body and life? An idea which imagination pictures to the inward eye.

(3) Ideation is naturally its peculiar territory. Here we can distinguish *three kinds* of activity; it works either by determination, or by abstraction, or by combination.

(a) In the first case imagination gives a definite setting to what is in itself indeterminate or gradually vanishing, *e.g.* to the noise of a waterfall, to the passing railway train, to the waves of the sea, to objects veiled in a fog. Hence come the differences that exist in apprehension of the same things by different people; hence also the delusions of sense, which often rise to illusions and hallucinations. Hence also many dreams, fixed ideas, and somnambulist states. Imagination here interpolates supplementary members between ideas, lengthens out series of ideas, and seeks to produce a rounded whole. Hence may be explained the untrustworthiness of most eyewitnesses, and the disposition of men to 'swagger' (cf. Falstaff in *Henry IV.*) On the other hand the power of imagination *isolates* ideas by freeing them from their connections in space and time. In this way the important moments of our life are lifted out of the sea of remembrances and are transfigured; gods, demons, angels, and departed spirits are freed from the confines of time and space. This is connected with the peculiar delight people take in the

extraordinary and marvellous, which causes us to find pleasure in the recital and exhibition even of fearful deeds (tragedies), and arouses in us the inclination to an overestimation of ourselves.

(b) *Imagination in abstracting* occupies itself in the domain of *logic*. The commonly held view that it has nothing to do with *thinking* and *investigation* is a mistake. The capacity to recognise truth depends so far on imagination that truth is in fact the agreement between idea and object. But plainly imagination in ideation imitates objects, reproduces these, and makes possible the comparison between what was thought and what is real. It alone gives to formal thought its *content*, and combines individual signs into the unity of the *notion*. Finally, imagination is the root of the fundamental laws of logic (identity and causality). For in order to know that $A=A$, we must hold fast both views of A , as well as represent all not- A as non-existing or existing otherwise. Further, that the intuitions of *space* and *time* without which there would be no world for us at all, no past and future, are mainly a work of imagination, we shall soon (Q. 96) show. We also owe to it the *categories*, by means of which we first introduce order and connection into our ideas.

(c) *Constructive* imagination is really *productive* imagination. For it unites its *ideas* with relative freedom to new images, which for this reason often appear bizarre and whimsical. It is here that we meet the fantastic forms that people dreams and fables and tales (fairies, sphinxes, centaurs, giants, dragons). Here also comes in the allegorical and symbolical nature of heathen religions. But constructive imagination produces also *Ideals*, i.e. archetypes of perfection.

For a man is not satisfied by knowing *where* and *how* things are created, but he also inquires *why* and *wherefore* they are so, and with the help of imagination he devises *ideals* in accordance with which he judges of these things. The importance which ideals have for the perfection of the individual as well as of humanity does not need to be demonstrated. Each man has an ideal to which he accommodates himself and ideals according to which he measures all things. All ideals however are included under the ideas of the *beautiful*, the *good*, and the *true*. (1) We call *beautiful* the most appropriate and harmonious realisation of an Idea in matter. Artistic imagination seeks to make a universal thought intuitable in some pleasing form. Since absolute beauty is to be found nowhere in reality, imagination glorifies nature by exalting some individual to the perfection of the concept. Thus the Olympian Zeus represents divine sublimity; Aphrodite, feminine grace; the Virgin Mary, ideal maidenliness; Achilles, youthful manliness; Iphigenia, pure human nature. (2) The *good* in a moral sense is the absolutely worthy, whose realisation by our free action is categorically demanded by conscience. This, too, in fact is never attained upon earth; in spite of this, imagination presents to us a realm of absolute ends of which each man is a necessary member. Every man feels it needful and obligatory to strive after this absolute good. (3) The *true* appears to science to be the highest good; science serves truth consciously or unconsciously in that it inquires into either the visible world around us (the Macrocosmos), or the invisible kingdom of thought within us (the Microcosmos). Although here, too, we never come to an end, still imagination represents

truth to us as being in itself a definite whole. Even the investigator of nature presupposes the unity of the Cosmos; he believes it to be a universe which has its purpose in itself. Philosophy and theology believe in a Cosmos of moral and religious ideas, and imagination shows us the Absolute (God), as their foundation and keystone. It transforms for us the soulless causal nexus of nature into an organism which is dominated by divine wisdom and love; it enables us to take an optimistic outlook beyond the countless defects, evils, and injustices in the course of the world. It is imagination which gives form to religious feeling in the gods of mythology and the symbols of worship; from it originate the visions of pious men, the mystic feelings which agitate us in God's house, at the sound of the organ, at the sacraments, at the rustling of the forest, and in the thunderstorm.

From what has gone before, the importance of imagination for *art* and *science* has been made clear. To the former it gives content and form, but it is also indispensable for the latter. (1) The *method* of inquiry, whether it be inductive or deductive, depends on imagination, which, now abstracting, now determining, but always combining, must come to the assistance of logical thought. *Hypotheses*, without which no science can make progress, are its work; thus Kepler examined twenty hypotheses before he laid down his astronomical laws. No discovery or invention takes place without imagination. (2) *Mathematics* rest entirely upon intuition, and thus upon imagination. (3) As to *history*, Ranke said that the true historian must have something of the poet in him, and certainly it is only by imaginative absorption in the old records, the characters,

states, and thoughts of a vanished age, that one can arrive at a right understanding of them. Finally (4) the *philosopher* needs imagination both in the sense indicated above (p. 232), and particularly when he essays to build up a system for himself.

It may indeed have the effect of *arresting* the progress of a science, if one assumes indeterminate images to be certain knowledge, and hypotheses to be proved facts, and if defects in proofs are intentionally or unintentionally overlooked. It is even a chief source of *error*; for as the creative and constructive faculty of the soul it leads us either (*a*) to represent the unreal as the real, or (*b*) to represent the real and ideal actuality as different from what it is. Thence proceeded the mistaken conception of nature in the earliest ages of our race, attribution of life and divinity to nature in early religions, wonders and divinations, visions and ecstasies, as well as superstition (belief in ghosts, demons, witches, charms, &c.)

Finally we will point out the importance of imagination in *social life*. This 'strange daughter of love, ever moving, always new,' as Göthe strikingly describes it, affords us constant entertainment in our daily life and intercourse. It glorifies everyday life by remembrance and hope, it accompanies the business of the day with a harmonious melody of multifarious ideas, and thus furnishes us with a world of fancy above and beside the actual world. For the impulse to play of fancy which the child has does not desert the grown man. Further, imagination shows itself in unfettered *intercourse* between man and man, in conversation whether by word of mouth or by letter (*le style c'est l'homme*); in taste, with which we give æsthetic form

to our surroundings, and in the *tact* with which we treat men and things. He has *tact* who knows, and who never transgresses, the bounds of what is becoming and excellent; to whom also a moderate and harmonious course of life has really become a second nature.

The *dangers* of an *unbridled* imagination are naturally great. Besides *error* which it often occasions, it frequently drives a man to enthusiasm and fanaticism, or lets him grow effeminate through indulgence in sentimentality (*e.g.* reading romantic books); it can make what is bad appear so seductive to ill-regulated minds, that they come to desire the reality of what is ideally presented; even the contemplation of impure pictures, or reading about crimes, easily poisons the imagination of the innocent.

95. How does imagination exhibit itself in sleep and dreams? (1) *Sleep* arises from a relaxing of the *nervous* system. This appears both from the fact that we can sleep in the daytime as well as at night, and that many narcotics (opium, morphia), spirituous liquors, some kinds of ether, laughing gas and carbonic acid gas, put us to sleep, whereas coffee and tea and wine, ether, and camphor, ward off sleep; further sleep is induced by pressure of or injury to the brain, by mental and bodily exertion, by advanced and tender age, as well as by tedium. *Physiologically* regarded, it is that state of inactivity of the brain which is really united with the nourishment and restoration of the substance of the brain. The *vegetative* processes are performed more slowly and feebly in sleep (the quantity of carbon exhaled is less by a fourth than in waking life): respiration, the beating of the heart and circulation of the

blood, are more sluggish, and the digestive organs and even the brain become more bloodless. Nevertheless Shakespeare rightly calls sleep the 'chief nourisher in life's feast.'

But the *soul* itself also appears to need sleep, as might be expected from the periodicity of all natural processes. After it has in waking (more than two thirds of the twenty-four hours) contemplated the external world, it longs to retire into itself. Thence comes the decrease of force and of pleasure in *thinking* in the evening, and the mental freshness and enjoyment in the morning, and the somnolency of newborn infants, which ever decreases as years advance.

Sleep goes through five stages:—Sleepiness, going to sleep, deep sleep, dream slumber, and awaking.

Sleepiness is characterised by a relaxing of the activity of the senses and of ideation. The eye still sees indeed but no longer perceives, the difference between the external and internal disappears; tones become a confused noise; smell and taste lose their sharpness, the skin its sensibility for temperature, pressure, and even pain. A gentle pressure comes about the temples, between the eye and ear, and increasing, obscures our senses as with a mist. A similar feeling affects the spine and we yawn and shiver, the muscles relax and seem to desire repose. The limbs refuse their service, the simplest movements are troublesome. All these phenomena affect the mind when we are *going to sleep*. The soul seems released from the trammels of the body and 'wrapped in a pleasing delirium' (Göthe), countless dream-fancies, of sight and sound especially, sink it into partial unconsciousness. It is probably the rising of this cloud of

fancies before the closed eye which causes the illusions of falling, flying, and hovering so frequent with persons who are falling asleep. Violent pain or nervous or emotional excitation, eager thought and investigation, *hinder* going to sleep, whereas it is *promoted* by tedium, monotonous song, rhythmical sound and movement, as well as by mechanical repetition of poems, &c. (artificial tedium). Napoleon I. was able by voluntary effort to go to sleep during the battle of Leipzig. Haller rightly called going to sleep a temporary derangement. *Deep sleep* hinders consciousness and movement, without entirely stopping both. For although a person sound asleep often perceives neither a loud noise (thunder itself) nor the stimulus of light, yet he is awaked by a sudden noise or by the ceasing of a continuous sound hitherto heard (*e.g.* a miller when his mill stops). That the soul has ideas, even in sleep, is a question that we shall consider immediately (*cf.* dreams). When one is *half awake* the external world is again influential; the nerves of sense perform their functions anew, organic feelings (hunger, nausea, irritation of the skin, &c.) are perceived. Finally *awaking* comes on more or less suddenly, according to our temperament and the kind of sleep we are in.

(2) *Dreaming*. Imagination indeed plays round us with pleasant dreams when we are waking, but in sleep it is especially busy. Here the play of ideas is quite unfettered, altogether undisturbed by the external world, only determined by the mind's store of ideas and by bodily influences. Therefore dreams are (1) apparently patchwork and irregular, but in truth determined by the interaction of ideas. (2) On account of our isolation from the external world we are without a standard

by which to distinguish thought from being (Q. 37); thence in dreams we regard everything as real, both things and events. Although dreams are notoriously *only* ideas, only subjective, they seem to have the character of objective perceptions. With this is connected the fact, (3) that they surpass waking perceptions. We see in dreams more beautiful landscapes, hear sweeter music, &c. (4) Thus all our powers appear to increase; the limits of time and space disappear, we fly through the air as through the years; we are more eloquent, know much more than in waking, even make poetry, &c. Sensations of pain are deadened while the sensation of pleasure is heightened; thence delightful dreams are oftenest had in illness, or in mental exhaustion. Finally (5) the *unity* of consciousness is destroyed. It is true that waking consciousness extends into dreams, and *vice versâ*, the ideas of the day before determine the dream and we remember our dreams the day after, still in dreams there are the greatest incongruities; no heed to place and time, confusion of persons and things, even a breaking up of the Ego into a plurality. We are questioned and know no answer, we are actor, public, composer, and stage all at once. We are scholars again, are examined, and surpassed by our schoolfellows, and we even surpass ourselves! And if we at times solve a problem better in dreams than we succeeded in doing the day before when awake, yet memory, the power of judging, and self-consciousness are in many ways affected.

The conditioning causes of dreams are: (1) *Bodily stimuli* (pressure, warmth, cold, indigestion, &c.); (2) *nerve-stimuli*, from *without* as well as from *within*.

Here *imagination* specially busies itself; the ticking of a clock becomes the barking of a dog or the strokes of an axe; warm feet make the dreamer fancy he is walking over lava; single tones are heard as elaborate melodies; pressure of the nerve-trunks produces an idea of fetters, which spins itself out into a terrible criminal history; smells recall to memory occurrences in our previous life (funerals, dinners, weddings, &c.) (cf. p. 196). (3) Ideas and sensations of the *day before*, especially those had just before going to sleep. Thus we continue scientific inquiries, lively conversation, passionate scenes in which we took part during the day just past. The hungry man dreams of banquets (Trenck), the prisoner of liberty (Egmont), the lover of the beloved (Gretchen), &c. (4) All mental moods and bodily conditions; thus longing, ambition, hatred, envy, &c. are quickened in dreams, but so is conscience. On this depends the *ethical* and *pathological* significance of dreams. Finally (5) dreams are influenced by age and sex, temperament and state of culture. Because in them the innermost needs of the soul express themselves, a certain *prophetic* power has from of old been attributed to dreams.

In any case, however many occasions may be given for them, they are to be explained as the work of *imagination*.

96. How do the ideas of time and space arise? (1)

We have already (pp. 169, 179) seen that in *mere* sensations there is no intuition of either space or time, consequently space and time denote *connections* between ideas. Still one must not with Kant so divide the *form* and *content* of a sensation as to make the former a subjective, voluntary, *à priori* intuition by which

reason acts upon the content of sense, in order to give it objective form.

Here we are not concerned with the metaphysical problem as to whether space and time have objective reality or not, but only with the psychological question about the origin of these ideas in us. Against Kant's view, that space and time are necessary but subjective *à priori* intuitions, are the facts:—(1) The infant of seven or eight weeks old, and a person born blind immediately after receiving sight, have each an equally vague intuition of space; the former grasps at the moon, the latter cannot apprehend by sight space of three dimensions. (2) It is still an enigma why we represent what is seen as spatial, and on the other hand what is heard as temporal. (3) The separation of matter (sensation) and form (size, figure, distance) is therefore impossible, because we never ideate *red* and such like except with some kind of figure. (4) A bringing together of *notions* also assumes for us the form of a spatial schema, whereas, according to Kant, time is the form of the internal sense. (5) And all empirical ideas of *time* are closely connected with the idea of space.

(2) The idea of *Time*, i.e. of the succession of ideas, arises as a consequence of the *development* of our own life. Because here undoubtedly certain conditions always first appear *after* others have *come and gone*, the ideas thereof always impress themselves on our recollection in a certain series. This involves the assumption of *self-consciousness*. It is only because hunger, the desire for this or that dish, the pleasure in eating and the satisfaction of having had enough, which follow one upon the other were regarded as sensations of our Ego, that is, of an *identical* being which is one

and the same with us who now speak, that it was possible to form the idea of a *series in time*. Therefore the idea of time is one that it takes years to *learn*, for the little child who is yet without consciousness of an Ego, only lives in the present; *reflection* first gives him a past and a future. Naturally here too *imagination* is an actual factor. For it both presents to us earlier events as a series which becomes more and more involved in obscurity, and it also, in analogy with our own experience and that of others, presents the future as a dark path lying before us, which we have to travel. Further, the reproductive faculty of *memory* strives to set forth what has been often experienced, in a symmetrical series in which those events most *interesting* to us stand out particularly clear like milestones. *Astronomical* time indeed contributes its part to this. The change of day and night, the succession of years, seasons, months, weeks, days, and hours, becomes the necessary groundwork of all our projects and remembrances; because this silent dance of the hours accompanies all events, these events appear to belong to the cycle of time, to which we also on this account, attribute metaphorically all kinds of forces. We speak of the tooth of time, and 'time's healing wing,' and say that time is the best comforter, and so on.

Astronomical time gives rise to the idea of a succession of determinate *length* but of indeterminate content, in order to apprehend which our faculties must be sharpened. Thus a sentry, a teacher who gives lessons by the hour, a sick nurse, &c. have a clear idea of the extent of an hour. But in remembrance it is the several divisions of a period of time which come back to us, and only those points are prominent which are of

general or special interest to us. Thus a *journey* appears to us soon after its completion as a continuous panorama, a short time after we only remember some of its remarkable scenes, at last we have a difficulty in recalling a single detail of it. It is the same with the *course of our life*; the older we become the larger are the segments that shrink into one, until at last only a general image of our childhood, youth, time of study, of our journeys, successes, &c., floats before us.

Now because our imagination moves restlessly back to the past, and forward to the future, it forms the idea of *Eternity*, but is never able to exhaust the idea. For however many quanta of time we may add to the time we have gone through, still Eternity always lies unmeasured before us. Thence a dizzy feeling of bewilderment arises, and many a man has been driven into a lunatic asylum by brooding on eternity. The clearest point of our consciousness is the present, but the mind, always busy, presses forward to the *future*. Thus the future conceals a countless host of expectations; he who hopes or fears, cares or longs for nothing more, is spiritually dead. Many *æsthetic* effects depend on the tension of expectation (the retardation of rhythm, the development of the tale in a drama or romance, the fugue, &c.) If we are occupied with ideas, feelings, or conations, we do not observe how time passes away. 'The clock never strikes for a happy man.' If the mind has little or nothing to do, time is empty, and it feels *tedium*. The same discourse wearies one man because it is too trivial for him, another because it is above him—both find too little nourishment for their spirit. Children, savages, and idiots, hardly ever feel *tedium*. The less the content of time reminds us of

the course of time, the less tedious is that content to us. It ought, as in Homer, to roll along in measured rhythm and pleasing vicissitude, for change that is irregular and very much diversified wearies also. In *remembrance* the same space of time appears shorter or longer according to the multiplicity of events; a year in youth therefore appears longer than one in mature age. The more unvaried an employment, the shorter does the time which it occupied appear in remembrance, on account of its having fewer points of interest. We can therefore prolong our life by a fulness of important thoughts as well as by brilliant deeds (*vitam extendere factis*). Schiller's biography is, in spite of all the monotony of his outer life, longer than that of an ordinary man who lives to the age of ninety. With a constant and uniform occupation the course of our ideas gradually assumes an *average* rapidity, which is the *individual* normal measure of the man. This naturally adapts itself to age, sex, temperament, mental endowment and employment. An important factor for the development of the idea of time is *hearing* (music and metre). (3) ~~The idea of *space*, i.e. of the simultaneous coexistence of ideas, is neither an intuition of the soul *à priori* (p. 241), nor solely the result of physiological processes, but an intuition which is produced *gradually* by the soul, though not without the aid of sense. We have already (p. 178) shown that the *eye* sees neither size, figure, nor distance of things, but only colours. Nevertheless it is of the highest importance for the spatial comprehension of things, both in a state of *rest* and of *motion*. The eye at rest commands indeed more than one point at once, but a here or there, above or below, first exists for us when~~

we distinguish different directions in the field of vision. And if even to the smallest impression of light there is a special nerve-element, yet the relations between *intensive* excitations would not appear *extensive* (spatial) unless the soul itself were extensive. If the soul (as Herbart, Beneke, Lotze, Volkmann, &c. hold) is only an *unspatial* atom, then it can absolutely attain to no spatial intuition. This is only possible if the intuition of extension involve extensity of intuition. But we acknowledged above (p. 150), that the soul by means of the nervous system is *extended* throughout its whole body.

Now in order to perceive anything spatial our eye must move about from one boundary to another of any object; the size of the object depends on the *number* of points which we can represent between the bounding lines. Where we can no longer distinguish two points side by side, the object shrinks up for us into one *point*. This apprehension of simultaneity as such is aided by the wonderful *mobility* of the eye. For since we (p. 177) only see distinctly with the 'yellow spot,' which is about .0131 to .0197 in. wide, we involuntarily seek to bring each object upon this part of the retina. These incredibly small movements of the eye, which naturally call forth a *muscular sensation* (p. 190), the mind gradually learns to *distinguish*, and thus it comes to know whether an object is above or below, to the right or left in the field of vision. Such perceptions are blended indistinguishably with the sensation of sight. The moving forward of images on the retina originates either in the fact that different points of the object go over *the same* part of the retina (when the object moves) or that *different* points of the retina go over the same

external objects (when these remain stationary). The decision as to whether things around us move, obviously depends on the muscular feeling alone. Thence also comes the illusion that, *e.g.*, trees, mountains, &c., seem to *move* when we travel past them, or that they *stand still* when our eye moves with the same rapidity as things in motion. Obviously *judgment* is required in order to know whether our body, or external things, or both move. This is proved also by Volkmann's interesting experiment with the 'blind spot' (p. 177); namely, if a line ends in the spot it appears *shortened*, but *not* if it reaches beyond it; a cross with yellow and blue cross-pieces, whose black centre is brought exactly upon the blind spot, so that it disappears, appears perfect, but with an alternately blue and yellow centre. Consequently the *mind supplies* what the eye does *not* actually *see*. The same fact is made evident from the purely psychical processes of *attention* (Q. 85), on which the acuteness of sight undoubtedly depends; for if this were only a physiological process we could not neglect the excitation of certain of the nerve-fibres for the sake of others. The fact that the soul in general projects the ideas of things, and distinguishes them strictly from the sensations which they cause, is only a consequence of its *self-consciousness* (p. 74). A further proof of this is the fact that under the influence of anæsthetics—ether or chloroform—in intoxication from hashish, and in the case of certain injuries to the brain, when muscular sensation goes, the diffusion of impressions of light in one plane also goes.

The *third* dimension of space (depth) first becomes known through the *sense of touch* (Q. 76). For the man born blind who was operated upon by Cheselden

at first believed that all things touched his eyes; and the person operated on by Franz could not distinguish a sphere from a disk or a cube from a square. But merely touching an object gives us an *image of pressure* which is not of uniform clearness, and which corresponds to the nearness of the sensible nerve-fibres in different portions of the skin. Thus by the movement of the organ of touch arises, by means of muscular sensation, the idea of surface. Now while in order to reach out from the body, and with the hand to touch external things, we have to go through portions of space which differ in length, we literally project the plane of our field of vision to a distance from the body. Further, the idea of *depth* is assisted by the following experiences—If our glance runs along a line to an angle, it *stops short* there because the line suddenly ceases, while the eye is disposed to pass on beyond it; yet it is immediately led on to another movement by the difference in direction of the other side of the angle. The same thing happens in the contemplation of any *figure*. Also a different muscular sensation of the eye makes itself felt in its accommodation for *distance*, and with increasing distance there goes decreasing magnitude of the *angle* which an object subtends in the visual field. And finally we have to take account of the decreasing size and distinctness of things due to increase of distance (aërial perspective), by which we are exposed to many illusions. (Thus the sun appears to us *larger* when near the horizon; everything appears to us *more distant* in proportion as more objects lie between us and it; strict symmetry, and retaining the same proportions, cause apparent *diminution*, as is shown by ancient architecture.) To this is added in binocular vision the

convergence of the axes of sight, which is greater for nearer points than for more distant ones, and the arising of *incongruent* images in both eyes which coincide but imperfectly, thus producing the impression of solidity. (In the stereoscope there are two *external* images as well.)

A *comparison* of the two senses by which we get impressions of space shows that for the conception of a *surface* the eye is superior to the sense of touch, and also that it is earlier developed. On the other hand, in reference to *solidity*, the latter so much surpasses the former that the eye alone would hardly arrive at the idea of the third dimension. Moreover, *hearing* is also of importance, since it gives us some information as to distance and direction in space. As in sight so also in respect of touch, a surface appears to us the *greater* the more numerous are the sensations called up by it; thus the same surface of a square appears smaller when felt by the finger than when felt by the tongue. The more moveable a member is, the finer is its *sense of space*. Especially important is the muscular feeling which arises when passing from the horizontal to the vertical plane. By practice we further *localise* all our sensations in the body and *project* them externally, *i.e.* we construct an *external world* out of the materials of our consciousness. The sensations of sight and hearing are especially associated; we can hear no noise without thinking of some visible thing. The 'projection' of sensations beyond the limits of the body which we observe in the use of all *instruments*, is deserving of notice. It is only because one has a double sensation (in the hand and in the instrument) that the stick with which he gropes his way is useful to the

blind man, the probe to the physician, the pen to the writer, &c. Pencil, needle, knife, &c., in this way become, as it were, united with our limbs, whilst our personal consciousness seems to be prolonged to the very ends of these instruments. Hence a person feels taller in a helmet, more stately with a train, a dolman, hoop-petticoat, gold chain, long sword, &c.

When what is temporal is spatially represented, we get the idea of a *space of time*; when what is spatial is temporally represented it gives the idea of *movement*. Thus, in periods of history, heroes stand side by side as in a gallery. The hour, which in the first place was only a space of time, becomes when it means *an hour's journey* a spatial measure; on the other hand, in clocks, we measure time by space. Things *moved* contribute particularly to our getting a conception of bodies, for they detach themselves from their surroundings, and in this way compel our eye to move.

By all the processes hitherto depicted we arrive finally at the idea of a plurality of independent *external things*. Whilst to the child at first its spatial surroundings appear as a connected *whole*, we gradually detach therefrom individual groups of ideas—things having many *attributes*. In fact, what we call an external thing is only a personification (hypostasis) of our sensations. It is our creature, but we are its slaves; the effect of ideas becomes a cause of ideation.

97. How are intuition and perception distinguished?

Intuition arises in us as a result of the processes described in Qs. 63–96, i.e. the *intuition* of a thing refers to the whole complex of sensations which we derive from that thing. It is developed out of numerous individual *perceptions*, i.e. combinations of nervous excita-

tion with the psychical states called forth thereby. Perception consequently is of the particular, intuition combines a manifold. The latter is not, therefore, as Kant thought, *innate*, but the result of perception. But whilst with perception there is joined the thought that what is perceived is an *external thing*, this thought becomes less prominent in intuition. Imagination represents all intuitions as in space or time.

Perception may be divided into external and internal. The *former* is the immediate knowledge of things co-existent and successive, has a basis of objective relationships mediated by the senses; the latter looks at our psychical experiences from the standpoint of self-consciousness with material exactness. Knowledge of the *external world* rests upon the combination of sensible and psychical perception.

98. What is thought? The ideas whose origin we have considered above (Q. 84), are preserved by *memory* and elaborated by *imagination* in multitudinous ways. But while these two 'faculties' proceed to some extent *mechanically* or *involuntarily* (consequently, so to speak, by chance), *thought* combines and divides ideas according to their *content*. Herein it follows not the simultaneity, similarity, or contrariety of ideas, but merely the logical necessity conditioned by their quality. By *attention* we distinguish essential from unessential marks, *abstract* the former and *join* them to the notion of the thing. Thereby thought acquires a certain *objectivity*, for our ideas *correspond* then to the real content of the thing. In that it grasps the *essential nature* of a thing, it obviously penetrates into the objective world; it combines and separates its ideas conformably to the combination and separation of things themselves.

In *sensation* and in *perception* the soul is dependent on the external world, in thought it makes this dependent on itself. For in the case of a dog, *e.g.*, we must see and hear and perceive him if he is there, must know whether he is brown or white, with or without a tail, &c. But how the dog in general is or must be constituted, we learn from no individual dog, nor from the sight of ten, twenty, or thirty dogs, but from thought alone. The *concept* of a dog ("the dog-in-itself") has, as a general idea, something necessary and permanent, because it is superior to fleeting individual perceptions.

Speech is an important aid to thought. By the fact that it holds together the constituent marks of a notion by means of a word, it makes thought easy, but by the same means it also hinders it. For since each notion is formed only from the intuition of individual cases, it comes in time to need *amplification*. He who only knows a plane triangle has obviously a less perfect notion of a triangle than he to whom spherical ones are also known. Thus the notion fluctuates, the word remains. How have the various meanings of the words space, time, matter, soul, &c., even of fire, machine, element, &c., changed with time! Hence the necessity of *science* in general, and especially of *philosophy*. For most controversies arise from the difference of the sense which we attach to the same words (logomachy). Were word and concept *identical*, there would be neither *synonyms* nor *homonyms*.

The fulness and perfection of concepts affords a standard by which to measure the culture of individuals and of periods. Only that thought is scientific which is *formally* and *materially* (relatively) perfect, *i.e.* is

self-consistent and in agreement with *reality*. Science is a system of knowledge deduced from one principle; its content is truths, its form logic.

99. How are understanding and reason distinguished? In our opinion there is really no difference between understanding and reason. For if, with Hegel, we ascribe to understanding the formation of concepts and judgments, but to reason inference, yet if we look close we find that concepts and syllogisms presuppose judgment. Indeed all thought is but judgment; for in order to form a concept, we must seek out the marks of a thing and distinguish them from those of other things, must separate the essential from the unessential, and detect amid the manifold the identity of the essential—and this is but to carry our judgment further. In the same way every syllogism, *i.e.* the deducing one judgment from a plurality, is a judgment. Thus the syllogistic conclusion is a mere formulation of something contained in the two premisses of a syllogism. Kant's distinction, according to which reason is the knowledge of principles *à priori*, understanding the same knowledge *à posteriori*, is untenable because in fact there is no *à priori* knowledge. As little can we assent to the view of J. H. Fichte, Ulrici, and Frohschammer, according to which understanding has to do merely with the sensible world of phenomena—reason, on the contrary, with the super-sensible. For we assert that knowledge of the sensible varies in nothing from that of the so-called super-sensible. In both cases our mind proceeds in accordance with the logical fundamental laws of its nature; in both cases we must inquire into the nature, cause, and design of all things

by means of the categories, which are indispensable, and yet are undoubtedly *super-sensible*.

But that the acceptation of a special faculty of *reason* is superfluous, is apparent in the first place from the obscurity of the definitions given of it by all philosophers. For what is meant by, *e.g.*, Plato, Schelling, Hegel, Wirth, &c., who designate reason as that which is *divine* in human cognition? Is understanding to be regarded as undivine (devilish)? And how is divinity to be recognised? But to call reason the knowledge of the divine does not do, for understanding also endeavours to be this; and, moreover, we should then have to ask whether the different declarations about the divine, which are very contradictory, are *reasonable* knowledge, and whether the objections advanced against them have arisen from reason or from understanding? But if with Ulrici, Frohschammer, and others, we denote reason as the faculty of *forming Ideas*, we do not see why understanding should not be capable of doing this, especially as an examination of Ideas (Ideas of the beautiful, the good, the true, &c.) shows that abstraction and imagination are the two sources of them. In our opinion, understanding is that capacity of thought which, proceeding from what is given, aspires to positive knowledge by the aid of its own logical laws. And it can arrive at this either (1) through perceiving by help of mathematical calculation the intelligible necessity of anything; or (2) by drawing conclusions inferentially from given facts; or (3) by itself perceiving something as objectively present; or, finally (4), by examining historical traditions and acknowledging them to be correct. But these four species of truths comprise our

whole store of knowledge—metaphysical knowledge not excepted.

The acceptance of a particular faculty of reason originates, as it appears, in *religion*. For in the most ancient times there was no question as yet of human knowledge by means of *understanding*; but instead of this, the imagination of priests invented a sort of popular metaphysics that answered men's ethical and emotional demands, and was accepted by the multitude quite uncritically. And when by degrees understanding began to stir, it elaborated as theology the religious histories and legends which it accepted as facts, and thus created a system of precepts, Dogmatic Theology, which in this way owed its origin and content only to the force of imagination, although it in part submitted to the laws of the understanding. Afterwards, at a stage of development at which all revelation is regarded as untenable, Philosophy attempts to know the world by means of understanding alone. Since, however, understanding is confined within certain limits, and the philosopher may not return to abandoned dogma, he rises upon the wings of productive imagination to 'speculation' in higher spheres. And this imaginative speculation which promises to supply the gaps in our knowledge he calls reason. Finally, the fourth stage disdains altogether sober understanding, and builds by means of reason, *i.e.* of the unbridled imagination, quite impossible castles in the air à la J. G. Fichte and Schelling and Hegel. Consequently what is called *reason* shows itself as a mixture of belief, imagination, and understanding. Important as imagination appears to us to be, in a philosophical point of view, and much as we are convinced that

the greater part of all knowledge amounts to belief (though not uncritical religious belief), we yet, for the reasons above given, reject reason as a special mental faculty.

The further development of thought belongs to Logic.

100. How does the idea of the 'Ego' arise? Since we have already (§ 7) developed the nature of consciousness, it only remains to explain here the origin of the idea of the Ego. That self-consciousness (*i.e.* idea of the Ego) is at first for the child and the uncivilised man coincident with the body, is evident. For by sight and touch, organic sensation, muscular sense and pain, the body is separated from the external world, of which it is at the same time a part. In it our soul becomes manifest, by it we find our right place in space, we operate on our surroundings and ascertain whether we wake or dream, whether we are in our senses or not (p. 67). Moreover it is in fact the seat of all our ideas, feelings, and conations (p. 115).

But in time a man learns that his Ego is not *identical* with his body. For the latter may suffer the loss of a part without the former being thereby injured, and also his Ego increases in thoughts and feelings of all kinds with years, while on the contrary the bodily forces decay. We are thus led to regard the ideal *essence* of our nature as our Ego. This *essence* has, as each one experiences in himself, a peculiar history of *development*. Continually changing, because in accordance with occupation, circumstances, aims, &c., it is filled with different ideas, feelings, and conations, we are yet irrefutably convinced of the *continuity* and the *unity* of our Ego. Where this ceases madness breaks

out. However difficult, even impossible, it may be to say what *now* is our Ego, it is still indubitably the *sum of all our experiences of life*; as Göthe rightly says, 'The history of the man is his character.' The so-called *pure Ego* of man does not therefore exist at all, but is only an *abstraction* like all other concepts (*e.g.* the horse-in-itself). When one wishes to *represent* it to himself, he must represent different properties, conditions, experiences, &c.

Consequently the Ego is of all ideas the widest in extent and at the same time the poorest in content. The *empirical* Ego coincides with our life's history, the pure Ego is not so much an idea as an *ideation*.

It is interesting to observe how *I* widens out to *We*, *i.e.* how we gradually identify ourselves with a greater common nature. Each one, as soon as he arrives at self-consciousness, finds himself a member of a *family* with which he is joined by ties of blood; next his Ego extends to the consciousness of the community, of the native land, of humanity; and next each man feels himself to be a member of many kinds of communities. The development of this many-branching social self-consciousness is sought to be exhibited by *social psychology*, or the psychology of communities. How important this idea of *We* is for *Ethics* does not need proof.

§ 14. FEELINGS.

101. What is a feeling? What a feeling really is can only be *described* in a roundabout way because it is a manifestation of the soul itself, whose *content* may indeed be perfectly distinct to us, but whose *origin* we are not able to exhibit. In the first place, feeling is

not identical with *idea*. For we have ideas of many things, *e.g.* a triangle, a centaur, &c. without being in any way affected by them. As little, as indeed might be expected, do feeling and *sensation* coincide. For (1) sensations are *original*, feelings *derived*, states of mind; (2) the former bring to our consciousness the states of our *body*, the latter those of our *soul*.

Difficult as is the explanation of it, yet the fact is indubitable, that the soul is *affected* by its own states, motions, and activities. For not only our ideas and sensations, but also the states of expectation, hope and desire, and the activities of observation, doubt, reflection, &c. are *accompanied* by determinate feelings. This fact is incomprehensible, if we (like the Materialists) regard the soul only as a function of the brain; for how could a function, *i.e.*, activity, be affected by its own action? The same difficulty occurs with reference to the view (Herbart's, Lotze's, Volkmann's, &c.), that the soul is an atomic Real. According to our conception of the soul as of a divine substance which has individualised itself as the consciousness which belongs to the human body, feeling may well be explained as the result of different psychical processes.

We have already seen (p. 172) that every sensation has its own tone, *i.e.*, it produces in the soul pleasure or pain. This is the case with the commonest sensations, though we first observe it when the *nerve-stimulus* in question passes a certain intensity (Q. 76). Since this pleasure or pain proceeds from the nerves or nervous system, not from the *soul*, we must designate it only as *sensation*. Certainly *Feelings* are also *called forth* by impressions of *sense*. Thus the foggy November air makes us melancholy, the pure air of spring makes us

cheerful ; the sight, even the mere idea of food, gives pleasure or pain to the hungry man, according as he has, or has not, an expectation of getting it. On the other hand, the sight of maggots, the smell of putrefaction, produces loathing in us by means of imagination—for children loathe hardly anything. But these states of the senses are more connected with the above (Q. 70) depicted organic sensations than with the *vital feeling*, which like a customary normal rhythm, accompanies our whole development.

In order to give a tenable *definition* of feeling, we must remember that every human soul is a manifestation of the Absolute Substance, in many ways conditioned, but yet relatively unique. As such it has continually to maintain and assert itself by reciprocal action of all kinds with other substances. The thence resulting states of action and reaction outwards, whether occasioned by sensation, ideation, motion, or conation, we call *Feelings*. Feeling is thus the *being aware* (apperception) of our total state. According as this is harmonious or not, the soul feels pleasure or pain.

The faculty of feeling may also be called *disposition* or *nature*, for it is the capability of being in happy, unhappy, &c. states of mind. Here the soul *possesses* and *enjoys* itself, here we find the profoundest depths of its being and action. It is by such possession and enjoyment alone that existence becomes worth having, and the soul like an instrument which perceives the melodies that life elicits from it.

The older Psychology conceived of feeling only as indistinct ideation, thought, and conation (Spinoza, Wolf). Kant more justly defined feeling as the unmediated idea by which the soul defines its own state

with reference to the objects of its sensations (*Anthropol.*, p. 98). Schleiermacher defines it as the identity of thought and will, in which thought ceases and will begins. In thought the being of things is posited in us, in will our being is posited in things. The zero point between the two is our being *as positing*, and the direct consciousness of self is feeling. Hegel on the other hand understood it as the lowest stage of mind, in which it has 'that totality of existence which is in itself reasonable'—that is 'as bare mind, which we may compare to the chaos which contains the world, in that it contains in wild confusion the elements of the Cosmos, as yet untouched by the Demiurgos' (Rosenkranz, *Psych.*, p. 261). Finally, the definition of Herbart and his school has not abandoned this fundamental error. For if we say that feeling is 'the being conscious of the state of tension of the idea and its ideation' (Herbart, *Psych.*, ii. 92, 413), ideation (thought) is here accented too one-sidedly.

It is well known that feeling is restrained by *understanding* (Q. 99), and suppressed; and on the other hand every new truth calls forth a feeling of its worth, and often enthusiasm (cf. Luther). From *imagination* there naturally arise many feelings, especially obscure feelings, which are best expressed by poetry and music. Thus Göthe unburdened his soul of love in *Werther*, and Beethoven in the Sonata in C sharp minor (the Moonlight); Frederick II. himself, in the Seven Years' War, scared away the thoughts of death by writing poetry. In the same way the tension of feeling is relaxed by *action*. On the other hand feeling influences our thought and will. Women judge according to their feelings often more

justly than men who judge in accordance with understanding. Feeling incites to invention and thought, it gives to our endeavours enthusiasm, fervour, and warmth. The old saying, 'Where there is much head there is little heart' is decidedly false. Men of acute understanding and at the same time of deep emotions are by no means rare; we need only mention Socrates, Plato, Dante, Shakespeare, Leibnitz, Spinoza, Luther, Schleiermacher, and Schiller. As feeling is excited by sensation and imagination, so are these excited by feeling. To feeling are partly due illusions and hallucinations. Thus Macbeth sees Banquo's ghost, Richard III. the figures of his victims, Gretchen sees her murdered mother, &c. Finally, disposition, temperament, education, civilisation, age, diet, climate, determine our whole *world of feeling*.

102. How are Feelings divided? The two points of view according to which alone feelings are distinguished are (1) their tone and (2) their content.

(1) As to *tone* they are divided into feelings of *pleasure* and of *pain*. The former mean an increase, the latter a diminution of our consciousness. Both are naturally again distinguished according to their *strength* and *permanence*. Moreover, pleasure and pain are *relative*. Pleasure when lowered becomes pain; a decrease of pain is felt as pleasure. Thus Socrates felt pleasure when his fetters were taken off. The same enjoyment affords different pleasure to different people, and even to the same individual according to circumstances and according to his frame of mind.

The so-called *mixed feelings* may be explained by reference to such facts; they are really only *oscillations* or quickly changing *contrasts* of feelings, whose rapid

succession appears as coexistence. Such states have been experienced by every one. Every one knows what it is to be exalted to heaven and cast down to hell, to feel pleasure that is bitter and torment that is sweet. The martyr and ascetic experience at once bodily pain and spiritual pleasure; the writer of elegies derives pleasure from his sorrow. Here come in hope and expectation, surprise, longing, melancholy and other feelings; and also the pleasure in the tragic, the dreadful, the exalted, and the humorous.

(2) The *content* of feelings depends on their *origin*. Since this is either our whole consciousness or a special group of ideas, we distinguish *general* and *particular* feelings. The former, because they range over a large and for the most part indeterminate compass of ideas, are vague, subjective, and obscure; the latter, on the contrary, are determined, objective, and clear. The general feelings have a formal character as regards the exhibition of feeling, the latter are precisely determined as regards quality; the former may be called also the lower, the latter the higher feelings. For the former are connected with our *sensibility*, the latter with *Ideas* (of the true, the beautiful, and the good).

The first point of view (as to tone) is of importance in all feelings, for they are always pleasurable or painful.

In accordance with the foregoing we have the following schema:—

- | | | |
|---------------------------|-------------------------------------|------------------------------|
| (1) General feelings . | { organic
sensible | } of pleasure
or
pain. |
| (2) Particular feelings . | { intellectual
æsthetic
moral | |

To this division corresponds also the history of the

development of feeling. From the lowest organic feelings the child rises by degrees to the feelings of sense, *i.e.*, to those that are called forth by sensations. The higher feelings first awake with self-consciousness, and they are influenced by ideation and will.

For the rest it is always difficult, on account of the instability of feelings, to draw decisive boundaries.

103. Which are the General Feelings?

(1) On account of the unity of consciousness, our feelings are never entirely *isolated*. Corresponding to *organic sensation*, a *psychical tone* pervades all feelings, and from this individual feelings must first take their rise. A little child has not joy, but is joyful; it does not for a long time know how to localise a pain. This vital feeling then actually determines the tone of the individual feelings. Thus, to the sorrowful all that once gave him joy appears as a disturbance; again, the greatest grief loses its sting in time. And even the highest pleasure in time loses its first charm; the first day of vacation, one's first walk after illness, one's first ball, &c., are the most delightful of their kind. It is even possible for pleasure at last to become loathsome.

(2) *Liveliness and dulness*.—All quickening of the rhythm of life is in general felt as pleasure, all retardation as pain. Music, dancing, conversation, games, walking, travelling, raise the vital spirits—loneliness, darkness, silence, want of employment, depress them.

(3) *Freedom and constraint*.—These feelings arise from the congregation in consciousness of a plurality of ideas. A special case is that of *expectation* and *fulfilment*. The force of imagination of the expectant person anticipates the future result, but is baulked by the perception of reality which does not present

the result. This baulking produces impatience, *i.e.*, pain. Then, according as our expectation is fulfilled or not, we feel *satisfied* or *disillusioned*. When we earnestly *desire* what we expect, we often deceive ourselves. Thus, Don Quixote takes a flock of sheep to be the knightly host that he expected, the lover constantly thinks that he hears the step of his beloved. *Hope*, *care*, and *doubt* are species of expectation. *Hope* is the pleasure which is derived from a confidently expected result. Its power is wonderful; it comforts the sad and raises the base, it strengthens the sick and animates the dying. The pain which arises from the expectation of unpleasant things is called *care*. *Doubt*, on the other hand, is the pain which arises from the fluctuation of expectation hither and thither between two or more possibilities. All doubt becomes insupportable in time, and ends, if it is not removed, in *despair* (Othello).

(4) With this is connected the pleasure of *success* and the pain of *failure*. Thence comes the delight in all games of skill (billiards, skittles, hunting), and the vexation at losing a game of chess or a skating match and the like, even when no money is in question. Hence our pleasure in a speech, a professor's lecture, &c., when we can easily follow because the matter interests us—*i.e.* is neither entirely new nor perfectly familiar to us. All *success*, whether in technical or intellectual labour, gives pleasure, because the stream of feelings flows unchecked. Hence labour that is unaccustomed, or too difficult or too easy, is *distasteful*; such on the other hand as is suited to our powers (neither too hard nor too easy, nor in a wrong direction) is agreeable. With this is connected the feeling of power

or of *impotence*. All activity is suited to the healthy man, activity is a *necessity of life* to him. Hence a boy's pleasure in running, wrestling, and fighting, a man's pleasure in riding, fencing, and swimming; in either case the sense of power is thereby augmented. Related to this is the opposition between (5) *labour and refreshment*. Labour is indeed by no means a curse, but a blessing. But it is a burden when we perform it against our will or with difficulty. Then the cessation of labour affords us pleasure and thence *refreshment*. Whereas the former was burdensome and *tedious*, the latter affords us agreeable *amusement*. If *amusement* is to give real refreshment, it must be *play* (in the widest sense of the word), *i.e.* stimulating and unlaborious occupation. Thus (a) our perceptions must be neither entirely new nor quite familiar; (b) we must not be obliged to form new concepts, but (c) only to bring our ideas into combinations which are new, and if possible surprising, though easily alterable (witticisms, riddles, anecdotes). (d) Our attention must be kept awake by constant change. Hence the interest of variety, of what is half guessed, secret, or forbidden. But the *aim* of life must not and cannot be mere amusement, but *labour* alone, *i.e.* the energetic spontaneous activity which pursues a practical end. The highest goal of man is attained when he knows how to make labour refreshing and refreshment useful.

(6) *Discord* is a source of pain; *order*, on the contrary, of pleasure. Everything that is restless, glaring, confusing, that hinders the attainment of repose and clearness, is distasteful. This is especially observable in the case of the sensations of *sight* and of *hearing*. As was shown above (p. 257), definite colours and sounds

and combinations of colours and sounds are accompanied by definite feelings; clear daylight and silvery moonlight, illuminations and fireworks, awake the special *pleasure* due to *light*, whilst darkness, and all dull, unsatisfying, quickly vanishing impressions of colour *repel* one. The specific psychical effect of colours individually satisfying to the eye, depends on conditions which are *physical* (length of waves and intensity of light), *physiological* (tone of the optic nerve and its relation to the light-stimulus), and *psychological*.

Nahlowski's attempt to draw a parallel between the timbre of particular instruments and special colours is interesting. According to this the sound of the shawm corresponds to *yellow*, the tone of the flute heard from a distance to *sky-blue*, the piccolo to *orange*, the oboe, which is suited for the expression of melancholy, to *violet*, the energetic trumpet to *deep red*, the majestic trombone to *purple*, and the soothing bugle-horn to *green*.

104. What are the qualitative feelings? Qualitative feelings, which depend less on our *subjective* state of mind than upon the *objective* nature of what is felt, arise from the harmony or discord of certain ideas. These belong to the domain of truth, beauty, morality, or religion. Accordingly we distinguish intellectual, æsthetic, moral and religious feelings.

(1) The intellectual feelings. As has been already (Q. 103, (3)) shown all success is accompanied by pleasure and all failure by pain. Thence comes the pleasurable feeling which accompanies *knowledge* in general, *i.e.* the pleasure which arises from an easy and fruitful train of thought. Even the reproduction of sensible perceptions, the recognition of things

formerly seen or heard, gives joy, as we may remark even in *beasts*. But joy in *truth* is peculiar to man (p. 229); he is thereby incited to the inquiry into and assertion of the true, although he can never find nor comprehend absolute truth. For it would be the complete agreement (identity) of thought and being. But the instinctive *feeling of truth*, *i.e.* the firm (although in the first place obscure) conviction, that such or such an assertion is true or false, serves us as a guiding star on the path to absolute truth. If we are convinced of the justice of our view without being able to prove it logically, we appeal to the feeling of truth in our opponent. This is the position which most women occupy with reference to truth. If on the contrary we recognise that any assertion harmonises with our other views, or is not opposed by either logic or facts of observation, we allow it to be *just* and gain thereby the feeling of security, of *faith*. But faith makes *happy*; that is the case in this instance also. All doubt is *disquieting*, and the more so the more lively our interest in the question that arises is. The further we penetrate into the domain of truth, the more observable is the feeling of pleasure in the *inquiry*. Here Lessing is a shining example, for he much preferred the active impulse of the mind towards truth to a mere idle possession of fact. When we are entangled in contradictions, in insoluble problems, we feel intellectual pain. Indeed truth has taken hold of him alone who has acknowledged the infinite value of truth for himself and for mankind in a theoretical as well as in a practical view.

Theoretically, deliberation causes us a certain amount of pain, for we are *undecided* and therefore as it were inharmonious; if anything important be in question,

we are even, like Faust, brought by it into a state of mental tumult. Finally, as soon as we come to a definite *judgment*, and consequently have *decided*, the harmony with the logic of thought or of fact thereby attained gives us pleasure. *Nihil est menti veritatis luce dulcius*, says Cicero. This is confirmed especially when one has by zealous inquiry arrived at a comprehensive *philosophic view*, and to struggle towards this and win it is a duty incumbent on every one nowadays, if he is not too indifferent or faint-hearted. For the child-like faith in which we were brought up does not hold its ground in face of the results of philosophical, historical, and scientific inquiry. Doubts on the contrary arise even at the schoolboy's desk. Unfortunately many remain in the bonds of scepticism, or sink into nihilism, or return to unreasoned belief; but this is in all cases regrettable. For it is only lively conviction that gives us strength for consistent action. From it springs philosophic enthusiasm (cf. Bruno, Galileo, Fichte, Schelling, and others), which only in the case of feeble intellects and coarse natures respectively degenerates into *extravagance* and *fanaticism*.

Practically, the feeling for truth expresses itself as a lively interest in the *promotion* of truth, and as *openness*; and conversely as horror of theoretical and practical *falsehood*.

(2) *Æsthetic feelings*.

They include the liking of ~~the~~ *beautiful* and dislike of the ugly. And, in fact, the liking must be (a) *not an interested one*, i.e. not determined by secondary interests, e.g. desire of profit, possession, honour, and the like. Thus we think a cathedral beautiful without desiring to possess it. 'The stars we do not desire, we

rejoice in their splendour.' (b) While we value a knife, a pocket-pistol, &c., just because it is *useful* to us for this or that temporary purpose, we value the beautiful *involuntarily* and *unconditionally*. Every one thinks certain harmonies beautiful, others ugly, and so with certain combinations of colours; *e.g.* yellow and blue, or red white and blue are beautiful; others again, as blue and red, yellow and red, are ugly. (c) The liking must depend on *form*, *i.e.* on the comprehension of a manifold in unity. It is thus distinguished from sensible pleasure and displeasure, for this attaches to the *substance* of what is perceived; the perfume of violets and pleasure cannot be separated. In beauty, on the contrary, the component parts may be severed from their connection. Thus the beauty of musical harmonies is distinct from the individual tones, and first proceeds from their connection; the beauty of Cologne cathedral does not lie in the individual stones, but in their order. (d) The *foundation* of beauty can be intelligibly analysed, that of the pleasant cannot. Raphael's *Sistine Madonna*, Canova's *Hebe*, &c., are thought beautiful by every one who has a certain imagination, but we cannot dispute about *taste* in matters of sense. (e) *Only homogeneous* (contrasting) ideas can appear as members of an æsthetic relationship. Connections, *e.g.*, of tones and colours, of figures and succession in time, of thoughts and tones, produce no æsthetic impression. No mere *repetitions* of the same tones, colours, figures, &c., can produce an æsthetic impression; a certain contrast between the tones, colours, &c., is required. Still this must neither exclude similarity, nor be precisely equivalent to it.

From this point of view then, æsthetic *criticism* has

to be careful when it determines *whether* and *why* an object is beautiful or ugly. For this end it analyses the whole complex feeling aroused by the object in the beholder or the hearer into *elementary* feelings, and examines their relationship to one another. Moreover, the really beautiful is as pleasing to the unlearned as to the critic; both have the conviction that the work of art *is* as it *ought to be*. The Idea lying behind it has found in its material a fitting (harmonious) embodiment. A work in which Idea and embodiment are thus in congruity is called *classic*.

In *architecture*, which creates beautiful houses and public buildings, symmetry and rhythm are pleasing, so that it has been well called 'frozen music.' *Plastic art* represents beautiful forms (especially human bodies), and renouncing a display of colour, produces its effect by means of proportion and curving lines. *Painting*, which works with colours, is able to represent the whole visible world, and even in part the invisible (feelings, thoughts). *Music*, whose material consists in tones, represents the beautiful by rhythm and harmony. Finally, the instrument of *poetry* is speech, by means of which it presents impressive feelings and lofty thoughts in a picturesque and pleasing manner.—*Three* chief kinds of beauty are distinguished: (a) the *sublime* is supremely and almost incomprehensibly grand, thus its form is not strictly proportioned. Conformity to law is there, but our measures do not suffice for it. The sea is sublime. When an absence of law predominates, the sublime passes into the *terrible*. The Godhead, fate, storm and tempest, and the elements, are sublime or terrible, according as we ascribe to them harmony, law, and measure, or not. Towards the

sublime we feel awe and reverence in the feeling of our own littleness, or joy and pleasure when we feel that our own origin is the same (*e.g.* a hero, Nature), although we are surpassed. (b) The *simply beautiful* is the harmony between energy and order, between the whole and its parts, between law and liberty; the simply beautiful is neither too large nor too small, essence and manifestation correspond to one another. Here Raphael is our ideal. If, as in feminine beauty, insinuating softness is united to this, it is called *pleasing* and *lovely* (Correggio). *Grace*, on the contrary, we find when beauty breathes ideal life and spiritual motion into even what is trivial (Titian). (c) That which shows great perfection (technical skill) in minutiae is denominated *elegant*, though as a whole it may be neither beautiful nor important (Cellini). The very opposite of the sublime is the *attractive*; like the former it stands at the outer limit of art, for it draws down the beholder from pure contemplation, while it excites the will and (like many pieces of still life of the Flemish masters) even appetite, or (as Markart, Baudry, Guérard, and others) desire. But it is only such extremes in this style that are blameworthy. Usually attractiveness depends on a heightening of grace, whereby we are aroused to a lively pleasure.

The opposite of the beautiful is the *ugly*; it gives us *pain* because it is wanting either in unity or in arrangement, or because it puts the mind into a state of discord by the similarity and want of harmony of its parts. Many an ugly thing is, however, not perceived to be such, partly because it appears beautiful in the connection of the whole, partly because it is very useful (the dunghill to the farmer), partly because the ugly

form is overlooked by reason of its contents (Socrates). The *comic* comes in here also. Descent from what is sublime and extinction of what is charming awakes our pity; it is the opposition between Idea and appearance, the ideal and the real, which arrests our attention. In the comic too, there is an antithesis which resolves itself, not as in the tragic into a dreadful end, but into a harmless *fiasco*. The laughter which it calls forth relaxes the tension of the mind, chasing away care, anxiety, and discussion. By bringing before us human weakness, it humbles our vanity and brings us back to nature.

The faculty of pronouncing æsthetic judgments is called *taste*.

(3) *Ethical feelings*. These arise from harmony or discord with the moral ideal. Good actions afford us pleasure, evil actions pain, whether performed by ourselves or by others.

Moral good is related to the beautiful in so far that it unconditionally challenges our approval; but it is distinguished from it, for (1) it awakes our *intellectual* liking because it approximates to a rule; (2) we are ourselves also *interested* in it, for the well-being of mankind depends on it; (3) it gives *worth* to him who realises it, while we despise and hate the evildoer; (4) it demands our free and reasonable practical *activity*; the beautiful on the contrary demands more especially imagination. Things and relations may be beautiful, the will alone can be moral. The rules of Ethics are *categorical*, those of æsthetics only hypothetical.

Moral feelings arise and grow in every individual nowadays, and this is analogous to the ethical development of mankind. The germ of our personality is the

impulse to self-preservation, which exerts itself selfishly as the desire for food, clothing, possessions, honour, and influence. At the same time every man (like every beast) feels *sympathy* with his kind. When the natural selfishness of the individual is limited by the action of others, and by discerning that he cannot attain his aims without having a regard for others, the love of his neighbour develops—at first towards his family, next to his race, and finally it becomes a love of all mankind. Thus from the union of *a sense of self* and *sympathy*, and with the help of reason, there grow up the *feelings of duty*, and *love*. Reason, education, and the experience of life finally produce in man the Idea of morality, as well as that of the course of action which is for the *interest of the whole*. What corresponds to this Idea we call good, we approve of it and derive pleasure from any action that is in harmony with it; we blame whatever opposes it, and feel pain therefrom.

(a) *Sense of self* is the feeling of heightened or hindered self-consciousness (Q. 100). However strong and deep this may be, we yet feel ourselves interfered with by circumstances and by persons other than ourselves. All such limitations afford us pain, every real or supposed victory over them, pleasure. The *true* sense of self arises from a person's *just* estimation of himself; the *false* from too high or too low an estimation. The former (a too *strong* sense of self) expresses itself in a contempt of persons and circumstances, especially of authorities (parents, teachers, superiors), and further, in idleness and pride, in hardness, bitterness, impiousness, and want of consideration. Its too great weakness on the contrary (*demissio animi*) exhibits itself in faint-heartedness, which has too little confidence

in self. This feeling of impotency hinders a man's cheerfulness, energy, and even his attention and knowledge. In presence of others he appears shy and dull. While strong consciousness exhibits itself by an upright bearing, energetic motion, and a bright glance, we recognise faint heartedness by the slow, awkward movement, the bent head and feeble voice. With this is connected—

(b) The *sense of honour*. For the just estimation of ourselves depends upon our *thoughts* as well as on our *actions*. Our *conscience* alone judges of the former and imputes to us our true value (subjective honour); the latter are subject to the judgment of others. No one can give or take from us *subjective* honour, the *objective* depends on our environment. Accordingly the *sense of honour* is the sense of the *recognition* which we deserve. As subjective it coincides with *conscience*. Every moral man must strive for the approval by conscience of his thoughts, words, and works. But it is also a moral duty to endeavour to have the recognition of *others*, for their judgment should not be indifferent to us; only one must not forget that external honour depends on the prejudices, the interests, and the traditions of society. Thus there is honour connected with the family, the race, and the State; there is even 'honour among thieves.' The truly moral man always acts so that he meets with the approval of his conscience, or at least of good men; if, besides this, public opinion honours him, he is glad, but if it refuses him its honour, he willingly renounces it. Indeed, most immoral actions often arise from a false notion of honour (drunkenness, extravagance, duelling, and war). Very great honour from others is called *renown*; it

consists in recognition not only by our acquaintance, but even by unknown people, and it may be by posterity. Thus renown transcends space and time. It must not only satisfy usual demands, but *surpass* them, not merely be acknowledged but be *gazed at*. It too, like honour, has a *subjective* and an *objective* side. In the former aspect, it in general comes simply to a man of great fame, even if this be gained by crime (Herostratus, Hödel); objectively it is gained by truly good actions, and such as are useful to mankind centuries later (Schiller, Frederick II.) Now according as a man regards himself as deserving or not of renown, he is modest or a ogant. He who strives for *true* renown (*i.e.* who perform really great deeds) is always *modest*; for just because he is on the way to the summit of renown, he feels how much still remains for him to do. *Arrogance* on the contrary springs from excessive self-importance. The *vain* man over-estimates his worth, and, indeed, for the most part on the ground of external and frivolous things; he is self-sufficing in his self-admiration, and, so long as his vanity is not offended, harmless. The *haughty* man, on the contrary, demands on the ground of real or imagined pre-eminence, that others should think little of themselves in comparison of him, that they should subordinate themselves to him. His bearing offends us, and if affected or 'stuck-up' he provokes our laughter. The opposite to him is the *humble* man, who willingly subordinates himself to others; although it arises from a feeling of one's own inferiority, humility for the most part does not feel pain, because the man gives way willingly. But one should only be humble before God. *Pride* is often, though wrongly, regarded as vanity or haughtiness, for it is

distinguished from the former in that attestations of honour are indifferent to it, and from the latter in that it does not treat others contemptuously or vexatiously. Pride is a virtue (pride of poverty, pride of station, &c. should be called haughtiness); it is the lively feeling of our own value which preserves us from debasement (lying, cowardice, hypocrisy, cringing), and incites us to noble actions. In this sense every man should be proud, as is proved by the example of noble characters (Iphigenia, Socrates, Cæsar, Cato, Paul, Spinoza, Fichte, Göthe, Schiller).

(c) The *sense of right* exhibits itself as pleasure in the maintenance of moral rules, or as pain at their breach. It has a *subjective* and an *objective* side. The former is prominent when wrong is done to individuals by injury to their rights, the latter when justice, *i.e.*, the law as recognised by the State, is infringed. The sense of right naturally expresses itself most strongly when *our own* rights are injured, whether it be that what is due to us is taken from us or that it is not given to us. Thus the child even feels every neglect or deprivation as pain, the grown man feels as such every detriment to his life, property, gains, to his honour and liberty, &c. He occupies a higher standpoint who feels injuries done to the rights of others as if they were done to himself. Further, it affords pleasure to every one when the wrongdoer is punished or when the injury is prevented or made good. Thence is explained the pleasure afforded by tragedies and the lenient judgment dealt out to criminals who are too severely punished or who were strongly tempted to wrongdoing (Mary Stuart, Egmont). But the sense of right reaches its highest point when it cannot bear

what is bad either in itself or in others, because it holds virtue to be the highest good. In this view it is also called *sense of duty*, which (as carried to great refinement by Kant and J. G. Fichte) urges us to find our happiness above all else in the fulfilment of our filial and parental duties and the duties of our calling (Antigone, Frederick II.) When this conscientiousness avoids with delicate tact all that could injure or grieve its fellow-men, it is called *tender-heartedness*.

(d) *Sympathy* is the pleasure or pain which arises from the pleasure or pain of our neighbour. The former is called *sympathetic joy*, the latter *pity*. While sense of self (p. 272) threatens to isolate us, sympathy takes us out of ourselves. We have shown above (p. 229) the part *imagination* plays in this. For since pleasure and suffering announce themselves externally by gestures, mien, sighs, crying, and the like (p. 115), we can judge of a man's feelings by his exterior, and must sympathise with them. Indeed he who has not the capacity either of *understanding* the expressions of feeling of others, or of *reproducing* them in himself, is either uncultured or coarse. People in general are more disposed to *pity* others' pain than to *sympathise* with their joy. 'Pity is human, sympathetic joy angelic,' (Jean Paul). For frequently there is mixed with sympathetic pleasure, pain, on account of the apparently higher happiness of others, *i.e.* *envy*; and even with the pity of most people there is mixed a certain pleasure at the misfortune of our neighbour (*malicious pleasure*). *Cruelty* is rather to be pardoned than this, for it for the most part has some reasonable source (ill-will, vengeance, hatred); malicious pleasure on the contrary is always produced either by coarseness or

depravity. Thus it ought to be subdued even in the youngest children.

Generally a man pities in others that which he *fears* for himself (Aristotle, *Poetica*, § 7); this again indeed depends on his imagination, education, and the extent of his horizon. On this the effect of tragedy is based.

From sympathy is developed *benevolence*, i.e. the unselfish interest which is always ready to give *help*, even to an *enemy*, without expecting a *reward* or even *thanks*. This moral benevolence is the disinterested love which the Bible praises (1 Cor. xiii. 1; 1 John iv. 7, iii. 1; John xiii. 34), and which it ascribes to God above all. It is distinct from love as an emotion.

We give a special meaning to the pair of notions which we contrast as *sympathy* (in a restricted sense) and *antipathy*. The former denotes an involuntary attraction towards, the latter an involuntary repulsion from, animate or inanimate beings. Thus we feel sympathy for certain persons whom we see for the first time, antipathy towards spiders, toads, snakes. Both feelings are founded for the most part on *idiosyncrasy*, i.e. a peculiar combination of bodily conditions.

(4) *Religious feelings*. Rooted in the *knowledge* of our own helplessness and in the impulse towards *perfection*, the religious feelings have reference to the *Divine*, i.e. the Absolute. The religious man feels himself animated and inspired by God Himself, and morally independent, he feels he owes Him thanks and obedience, and feels himself made happy by the idea of being one with Him.

As an instinctive sense of the Divine innate in man, religion is equally capable, and in need of, development. Whilst the Fetish-worshipper makes any kind of thing

his God, the Polytheist honours the forces of nature as personal beings, and the Theist thinks of his God as a personal Being full of wisdom, power, and love; finally, the Pantheist imagines his as the reason which supports the universe, consequently the abstract of the True, the Beautiful, and the Good. But almost all have the same feelings, namely, (a) *Devotion*, i.e. the being overwhelmed by God's sublimity, and *veneration*, the feeling of His infiniteness—(b) *Thankfulness* for all that we receive from Him—(c) *Humility*, which, arising from the consciousness of our imperfection, expresses itself in *sorrow* and *repentance*—(d) *Piety*, i.e. the feeling of the highest satisfaction in Him, which is called according to what it refers to, faith, love, or hope.

Religion is of far-reaching importance. It gives a man comfort and hope in misfortune, it solves the most difficult problems of life by exhibiting the origin, the laws, and the end and purpose of the world's history; it assigns to the will both freedom and significance. Indeed, as religion influences our whole thinking, feeling, and willing, so it is again independent of these. False *theology* leads to *superstition*, too much *indulgence* in *religious emotion* to what may be called *religiosity*, and a false direction of the *will* to *fanaticism*, besides which we have to consider the pregnant influence of *imagination* upon religion (p. 234).

§ 15. THE EMOTIONS.

105. What is understood by *disposition*? We have already (p. 258) mentioned that the life of feeling may be generally designated by the term *disposition*. In particular it signifies that bent of the psychic life which is finally gained by means of repeated movements of

feeling. The vital feeling (p. 262) forms the background of each several frame of mind, which is influenced by innumerable slight emotional disturbances and obscure ideas. The different experiences of the day, which affect us now as enlivening and again as putting us out of tune, produce in a special manner *good* or *ill humour*, cheerfulness or melancholy. For the most part the *first* impressions that we receive in the morning, or on joining a party, determine our *humour*, and upon this depends our attitude to all around. The ill-humoured man is vexed by the very flies upon the window-pane, whereas the good-tempered man accepts even real unpleasantnesses cheerfully (a shower of rain, mockery, &c.) He whose frame of mind changes often and without reason, is called *variable*. This weakness of character generally arises from hypochondria, or hysteria, or disease of the liver.

Disposition is, like understanding, imagination, and character, employed in both a good and a bad sense (as *vox media*); we speak of noble and bad, of amiable and of savage dispositions. No reproach is more severe than that of *the absence of a good disposition*; and this may be directed both against *stupid* and *uncultivated* men. Somewhat different is *goodnature* and its opposite. A *goodnatured man* is easily moved to gaiety and gravity; because he enters unconstrainedly into everything, and deals with it pleasantly. Such a nature is, indeed, superficial. Those persons are generally *lacking in goodnature* with whom the understanding, will, or business has almost killed the life of feeling, *e.g.* pedantic savants, importunate fanatics, and restless men of business. If, on the other hand, the emotional life is cultivated one-sidedly at the expense

of the other forces of the soul, there arises *sentimentality*, which, instead of thinking clearly and acting decisively, revels in mere emotion. Cf. Werther-ism, Pietism, and the disposition that is called *romantic*.

Again, we sometimes find a *childlike* disposition in naïve, good people who, like Angelico da Fiesole, are unable to comprehend the wickedness of the world, or, like Augustus Neander, although they know it, still would have benevolence and mildness rule. Such people are *kindly*, for they do not care to have a will of their own; but they are often despised as weaklings and abused by deceivers.

It is obvious that *woman*, by nature and education, is fitted to cultivate the emotional life more than man, who in the hurry of life must strive above all things to gain knowledge, character, and position. Still the often expressed opinion that woman has more capacity of emotion than man is false. For he has usually more susceptibility for the higher feelings (Q. 104). Men have done incomparably more in the domains of art, poetry, religion, and philosophy, than women; which is not merely a result of a more productive imagination, but of deeper emotional nature. A man understands much more profoundly right and duty, honour, friendship, and love, as is proved by daily *experience* and by *poetry*. Still it must be observed, (1) that naturally there are exceptions to the rule (Iphigenia, Antigone, Penelope, Lucretia, Joan of Arc, Margaret More, C. Corday), and (2) that the sense of what is becoming, and of what is pleasing, and feeling for the sufferings of others, are usually stronger in women.

106. What *temperaments* are there? It is evident that our emotional life is very much influenced by our

bodily constitution. A healthy, strong, well-developed man, all whose bodily organs perform their functions rightly, must differ widely from a delicate, weak, deformed man with a defective organisation. Heart, lungs, gall, liver, circulation of the blood, and respiration—even the conformation of the muscles and bones are of influence; so are sex and age, geographical, terrestrial, and cosmical influences.

But one of the most important factors is *temperament*, i.e. the anthropological frame of mind, or natural bent of a man's feelings. *Four* temperaments are commonly distinguished: the sanguine, phlegmatic, choleric, and melancholy; but in doing so it is forgotten that since every one has *two* parents, or *four* grandparents, there is nowhere to be found a thoroughly simple temperament. Rather each one has a temperament which is a mixture of all four, the justice of that four-fold division being presupposed.

This division is derived from Hippocrates of Kos (d. 377 B.C.), who gave as the base of these the four chief juices of the body, blood (*sanguis*), gall (*cholus*), black gall (*melas ch.*), and phlegm (*phlegma*). Galen (d. 200 A.D.) next taught that in every man there is a peculiar mixture (*temperatura*) of the four juices, and that the preponderance of one or another determines the disposition. Haller (d. 1777) on the contrary, explained it from the strength and sensibility of the muscular fibres, the susceptibility of the nerves, and the relations of both. Kant distinguished (*Anthropol.*, p. 258; Leipzig, 1833) temperaments of feeling and of activity; Reinhold, Snabedissen, and Hagen supposed corporeal, spiritual, and mixed temperaments, while Hegel brought his dialectical tricho-

tomy to bear upon this question also. But how little tenable this whole distinction is, is shown by Vischer's proposition (*Æsthet.*, § 331): 'The melancholy Hamlet is choleric at his own phlegm, and he breaks out into sanguine joy at the success of his wile against the king.' It is moreover right that every age should have its favourite temperament. Aristotle (*Probl.* 30, 1) praises the melancholy temperament, the Hegelians the phlegmatic, &c.

Usually the four temperaments are thus described:—

(1) The *sanguine*, is, on account of its great, though not very deep sensibility, lively and quick in ideation, feeling, and will, but without steadfastness; it is cheerful, sociable, and good-humoured, but capricious, thence often uncertain and troublesome. Its motto is 'Exalted to heaven, cast down to hell.' Examples—Egmont, Leicester, Philine.

(2) The *phlegmatic*, the opposite of the preceding, has small, though retentive, susceptibility. It is slow in thought and action, is with difficulty interested in anything, but holds the more tenaciously to its convictions, plans, and inclinations. Motto, 'Slow, but sure.' Examples—Falstaff, the Emperor Frederick III., Frederick William II.

(3) The *choleric*, whose constitution is firm, strong, and fiery, shows a deep sensibility and an inclination to external activity. Thought, feeling, and will are capable of equal cultivation. Consciousness, fancy, imagination, energy, capacitate it for the conception and the carrying out of lofty aims of life. Its energy and desire for honour often make it fanatical. Motto, 'Through conflict to victory.' Examples—Alexander the Great, Cæsar, Moses, Mohammed, Charles XII.

(4) The *melancholy* temperament, the contrary to the preceding, has highly developed nervous susceptibility, great sensibility and internal activity. Its feeling and thought are especially deep ; it is inclined to probe self and secret things. It is introspective and takes pleasure in grave thoughts and sad feelings, while it is repelled by the loud throng of the world. It is inclined to enthusiasm, but also to distrust, obstinacy, and cruelty. Motto, 'All is vanity.' Examples—Tasso, Lenau, Novalis, Schopenhauer.

Poets are generally melancholy, heroes choleric, ordinary people phlegmatic, and men of the world sanguine.

This whole description, however, is only one of *extremes*, in which the temperament is indeed a kind of disease ; this is shown by the predominant place occupied by processes of development in the phlegmatic, in the sanguine by the abnormally developed animal life, in the melancholy by too much nervousness, in the choleric by an excess of so-called vegetative processes. We may say there are as many temperaments as there are *people*. Indeed, the same individual usually passes through these four principal stages in his life ; for in childhood people are sanguine, in youth melancholy, when of full age choleric, as old people phlegmatic. If it be wished to determine their fundamental temperament, two types have at least to be combined ; thus Schiller was melancholy-choleric, so were Luther, Frederick II. ; sanguine-choleric again were Göthe, Shakespeare, Leibnitz. Each temperament has its special advantages and dangers—the best is that which attains by moral activity to the advantages of all, *i.e.*, which takes impressions from the world easily, but at

the same time deeply, which impresses itself energetically on its environment, while it tenaciously asserts itself. As everywhere else, here, too, the *Ideal* is harmonious culture throughout.

If a division be desired, *two* kinds may be distinguished; people whose *active* or *passive* temperament preponderates. In the former case *activity* is predominant, in the latter *sensibility*; there the *will*, here *feeling*. The former favours *character*, the latter *emotion*.

107. What are *emotions*? 'The average psychic state, in which our feelings are in relative *equilibrium* is called *emotional calm*. Absolute rest, a complete standing still, naturally exists as little in the life of feeling as anywhere else in the Cosmos. The opposite of calm is emotion, namely sudden and powerful *disturbance of soul*.

Emotion has been wrongly designated as 'especially strong feeling.' For (1) there are many, and these precisely the deepest feelings (love of country and of children, devotion and poetic inspiration) which are very far removed from this peculiar emotional disturbance. (2) A disturbance of the psychical equilibrium does not always necessarily result in an emotion; thus we feel relaxation, care, disquietude (p. 262) without being greatly disturbed. (3) Emotion is indeed always accompanied by feeling, but the latter is not necessarily manifested as emotion. Deep feelings are above emotional manifestation, especially æsthetic and moral feelings, while a violent and sudden movement of emotion causes the feeling to be suspected (feeling of justice and of truth).

Emotions are occasioned by *surprise*, either from *without* (as in anger, fright, &c.), or from *within* (doubt,

sorrow, &c.) In both cases a person is made beside himself. Thus in fear and terror our thoughts escape us, we lose our head; in astonishment our understanding ceases to act; from joy we become, as it were, mad; the angry man becomes speechless and rigid, forgets himself and his social position, &c. For all emotions cause a physiological reaction in the whole *organism* which is apparent either as *exaltation* or *depression*. Thence arises the sudden tension or relaxation of the *muscular system* (clenching the hands, cramp, trembling, helplessness), disturbance of the *circulation of the blood* (blushing, growing pale, beating of the heart), of the *respiration* (panting and stopping of the breath), and of the *fluids* (secretion of the gall, the saliva, the tears). On the other hand again, this alteration in the organism has an influence upon the soul. In the first place this (the soul) affects the body, then the body prevents the soul from returning to its former condition of rest. He who frowns like an angry man and clenches his fists, easily becomes really angry (cf. great actors), and the soft hand which smooths our brow, soothes the soul at the same time. In the same way a glass of water is a wonderful antidote to excitement, a glass of wine to faintheartedness; if one can induce an angry man to sit down, his emotion is thereby half subdued.

Every emotion has three *phases*; outbreak, culmination, and abating; the first and third last some time, while the 'being beside oneself' naturally is of short duration. Moreover, there is often an *oscillation*, i.e. culminations alternate with slackenings and new outbreaks.

It is evident that constitution and temperament determine to a great extent the origin and degree of any

emotion. The sanguine and choleric temperaments are more liable to emotions than the phlegmatic and melancholy. Courage presupposes a certain degree of health; one who is resting comfortably is less inclined to emotion than one who is moving restlessly about. How the physical accompaniment of emotion affects the psychical state we saw above. Education, habit, and culture are particularly important in hindering, or at least in moderating, wild outbreaks of emotion.

We may compare celebrated delineations of the emotions in Homer, *Il. I.*, 102 (rage); Shakespeare, *K. John*, iii. 4 (grief); *Henry VI.*, 3rd part, iii. 4 (anger); *Pericles*, v. 2 (joy); *Othello*, (jealousy); Schiller, *Braut v. M.*, v. (pain); *Maria Stuart*, iii. 3 (hatred); Göthe, *Clavigo*, v. (vengeance); *Tasso*, v. 4 (love). In general we find in the poets the best representations of the emotions.

The Stoics and the disciples of Pyrrhos commended *apathy* (emotionlessness), because they regarded the emotions as diseases of the soul. Although they are not this, still in any case one should endeavour to attain *self-mastery*, so that one should never be 'beside oneself' or do anything of which one would afterwards be ashamed. Whether any one can quite attain to this is another question. Indeed the most celebrated stoical *apathy* (Cic. *Tusc.*, II.) was often only affectation (Shakespeare, *Much Ado about Nothing*, v. 1; Wieland, *Musarion*). And many emotions are certainly helpful to the health of the soul, e.g. sudden cheerfulness, enthusiasm, &c.

108. How may the emotions be divided? Like the feelings, emotions either *further* or *hinder* our vital feeling. In the one case there is a sudden *overflow* of

emotive energy, in the other a sudden *diminution* of it. In the former case there is in a physiological aspect *exaltation*, in the latter *depression* of the nervous system.

Kant has called the former class of emotions 'sthenic,' the latter 'asthenic' (*Anthropol.*, § 72); F. A. Carus designated them as vigorous and decaying (*Psych.*, I., 438); Drobisch named the former overflowing, the latter emptying (*Empir. Psych.*, § 83). They might also be divided into emotions of *pleasure* and of *pain*. Still it must not be overlooked that the same emotions exhibit themselves differently in different people. Thus the deepest grief has no tears (Shakespeare, *K. Henry VI.*, 3rd part, ii. 1; *K. John*, v. 2); many people become dumb from joy, others exult, &c.

The fundamental type of the active emotions is *anger*, of the passive, *fear*. Nahlowski has given the following table of the best-known emotions :—

1. <i>Emotions of the active or plus side.</i>	2. <i>Emotions of the passive or minus side.</i>
Pleasant surprise.	Unpleasant astonishment.
Sudden gladness.	Perplexity, confusion.
Merriment.	Sudden uneasiness.
Absence of restraint.	Painful surprise.
Intoxication of joy.	Sorrow.
Delight.	Anxiety.
Courage.	Discouragement (Faint-
Anger.	heartedness).
Rancour, vexation, secret anger.	Shame.
Admiration.	Fear, anguish.
Enthusiasm.	Fright, dismay, horror.
Ecstasy.	Repentance.
	Despair.

Corresponding to the feelings, the emotions may also be divided into (a) general, (b) qualitative (cf. p. 261). To the former belong: (1) *cheerfulness*, (2) *merriment*, (3) *extravagance*, which exhibit themselves—(1) in the mien; (2) in words; and (3) in actions. Also their opposites: uneasiness, sadness, and vexation.

The qualitative emotions are: (1) those which are connected with *expectation*:—impatience, hope, despair, grief, fear, surprise (fright, dismay, horror). (2) Those founded on *æsthetic* pleasure:—admiration, enthusiasm, delight; and on *æsthetic* displeasure:—aversion, loathing, abhorrence. (3) *Intellectual* emotions are:—Perplexity, confusion, astonishment, enthusiasm. (4) *Ethico-religious*: wrath, (religious) emotion, shame, repentance, rapture, ecstasy. (5) From *self-emotions* arise courage, haughtiness, anger; faintheartedness, discouragement, anxiety. (6) From *antipathy* arise envy, malicious joy, rancour, and secret anger.

§ 16. THE IMPULSES.

109. What is an impulse? All beings are, as already shown (p. 130), individuations of one Divine Substance, all are centres of force which affect one another by *reciprocal action*. But this is *diversified* in many ways. While the inorganic world only exists by mechanical and chemical action or reaction, *organisms* are systems of forces, which by the indwelling principle of the germ are spontaneously and purposively developed (pp. 136, 137). But an important difference between *plant* and *animal* (man) comes again to light. Both are indeed bound by determinate conditions as to their origin and existence; both are sustained from within by means of

metabolism; but the animal has what the plant has not:—(1) the perception of a *need*; and (2) spontaneous *movement* to seek out and lay hold of that by which that need is satisfied.

Now the *basis* of this capacity is the *vital force* (Q. 55), which by vague feelings of pain urges the soul to exert itself in every possible direction. The still undeveloped human soul leads, like the soul of an animal, a mere *life of impulse*, *i.e.* it is impelled unconsciously, but conformably to purpose, towards the means of satisfying its needs. All that is clear in this is the *pain*, and the *impulse* to remove it; in what manner this can be done is at first *obscure* to the soul. Still generally the way to do so is already indicated in the organism itself. For the sensory nerves, stimulated by pain, set going in the motor nerves those *reflex movements* (Q. 81) which take place (although without sensation) even in decapitated animals and men. Whereas the seed of corn can neither seek nor create the conditions of its growth, but must wait until it and they meet, though all the time it remains capable of life even if the conditions fail beast and man possess the *impulse i.e.* (an endeavour determined in its nature, only indeterminate as to its object) which from the first moment of its being compels the individual to seek for whatever is indispensable to him. This impulse, which exhibits itself in spontaneous many-sided endeavours, by degrees ever becoming more purposive, is the informing *Idea* of the organism (p. 137).

In the lower animals this exhibits itself more especially as *instinct* (pp. 139, 200). This is distinguished from human impulse chiefly in this, that it *never makes a mistake*, so that nature has thus saved animals from the

difficulty of *choice*. This 'conscience of the organism' answers to outer and inner stimuli with certainty and conformity to purpose, so that one is driven to the acceptance of a teleologically modifiable Cosmic Reason. For that it is not a result of education, reflection, or instruction appears from the fact that immediately after they emerge from the pupæ, bees collect honey and build a cell just as cleverly as one of their old companions could do either; that the larva of the so-called stag-beetle *before* it is changed bites a doubly large hole so that its future horns may have room, &c. The duck when it first goes into the water swims instinctively, the bird in the same way builds its nest, the spider spins its web, the caterpillar its cocoon. This certainty makes instinct appear so admirable, but it has also only a limited sphere of activity. Human impulse is indeed more complicated and uncertain, but it is fitted for numerous functions, and—what is most important—is subjected to free intelligence. The lower animals too sometimes make their instinct serviceable to thought; thus the paper-wasp builds its nest of shreds of wood and water, but prefers real paper; many animals learn by being broken in to master their instinct, they even lose it almost wholly by domestication. As in the case of the lower animals, so in a still higher degree in that of *men*, the proposition holds good, the more instinct the less intelligence. How important it is in *education* to consider instinct is self-evident.

110. ~~How are the impulses divided?~~ All impulses are in fact only modifications of the *impulse to self-preservation*, for all are directed to the maintenance, heightening, and propagation of human existence (cf. Cicero, *De Fin.*, 3, 5; 5, 9—Seneca, *Ep.* 121). Still they

may be classified as *physical* and *psychical* impulses, and the latter again as *intellectual*, *æsthetic*, *selfish*, and *social*.

I. Physical impulses.

The soul would not be, as it is, a *force*, if it did not exert itself, or, since this is not possible from the very beginning of its existence, if it did not *try* to exert itself. Here first of all comes in (1), the *impulse to food*, which in a narrower sense may be called the impulse towards self-preservation. It has its roots in the *pleasure of existence*. For when food is given to the body, the soul feels pleasure in the satisfaction of a need. If this be the first *experience*, the wish is aroused in the soul of having this enjoyment oftener, and from this the danger of an inordinate longing for enjoyment is easily developed. (2) The impulse to *movement* is particularly strong in children (kicking, springing, running), but it shows itself also in grown persons in the pleasure that is afforded them by walking, gymnastics, riding, and the like. From this again arises the pleasure of *rest*, *i.e.*, the relaxing of the strained muscles. This leads to (3), the impulse towards *change*. As in all nature, so also in the life of man, a symmetrical rhythm of contrasts is most advantageous; labour and rest, hunger and satiety, waking and sleeping, &c. promote one another. Pleasant as it is in the mornings to go refreshed to the day's work, it is equally delightful in the evening to sink wearied into the arms of sleep; it is as delightful to exercise oneself energetically on horseback or at gymnastics, as it is afterwards to stretch oneself tired on a sofa, &c. Since by constant repetition of the same occupation a certain *dexterity* is attained, we return most gladly to accustomed activity, to familiar surroundings, to old acquaintances,

&c. Moreover from this impulse towards change the fact is explained that there is nothing we have more difficulty in bearing than a series of "good times" (Göthe), that no one, even the most idle, can persistently be wholly inactive, that the greatest pleasure finally becomes distasteful. (4) Sexual impulse tends to the preservation of the race. The satisfaction of this impulse, like that of the other impulses, affords pleasure. Like the others, only in a higher degree, it affects the soul. It does so when it stimulates the æsthetic feeling, then when it occupies the imagination, when it induces men to choose for themselves, and when it calls forth various ethical motives. This leads us on to *psychical* impulses.

II. Psychical impulses.

(1) Those of *sense*, i.e., those which are effective by means of the *senses*. For the soul *desires* sensations of sight and of hearing; complete darkness is as unendurable to it as is absolute silence, we only welcome either as a refreshment when we are over-stimulated by too many waves of light or sound. From this is developed (2) the *impulse to ideation*, which is the pre-requisite for the intellectual development of man. This impulse exerts itself in the *gaining* as well as in the *combination* of ideas, as we have often shown in this book (Qs. 40, 85, 92). From *curiosity*, which in general only seeks new ideas without caring what kind they are, there is gradually developed the *desire of knowledge*, which desires objective ideas and such as are of value for our development. If this impulse towards what is *new* be not satisfied, there arises the above-described (pp. 243, 264) *tedium*. (3) Related to the impulse towards learning is the *impulse to play*, which urges the

child to combine his ideas after his own fancy (p. 226). His power of imagination desires to exert itself, therefore common playthings which are susceptible of many changes are his favourites (bricks, sand). Thence also comes the child's delight in stories (p. 230). Moreover the impulse to play exhibits itself also in grown persons, particularly in those who do not possess enough imagination to be productive themselves; they like games which are partly of chance and partly of skill, like their daily life (cards, dominoes, chess). (4) It is obvious that the *æsthetic impulse*, i.e., the desire for beauty, is closely connected with the preceding. Both are satisfied by imagination, and the artistic creation is, in fact, a graceful play of imagination. How much beauty is a necessity even for the rough savage, is apparent from the fact that he seeks it in all ways. He adorns his body, his dwelling; he desires beautiful weapons, and the handsomest bride (his idols are caricatures only because they must look terrible). A man who is there who has not felt in himself the power of beauty? All ordinary men and women feel admiration for a beautiful human being; beautiful landscapes, buildings, pictures, statues, poetry and melodies, fill everyone with delight. Again, *æsthetic sentiment* is connected with religion; every one has (5), an *ethico-religious impulse*, as we have shown above (p. 277). Every man wishes to be good, and would like good to be done by all; everyone has a sense of right, and hates lies, deceit, and injustice. Augustine (d. 430) says 'Our soul is not at rest until it finds rest in God;' and Göthe, 'In the sanctuary of the heart there dwells a desire freely to surrender oneself out of gratitude, to a higher, purer, unknown Being, deciphering men's hearts

the eternally unnamed—we call this *piety*.' (6) *The egoistic impulse* which urges us to assert ourselves, and in practice exhibits itself as an impulse towards possession, honour, and power. Every man would like to make himself of importance by money, consideration, and influence. As a counterpoise to this selfish impulse in mankind, is (7) *the social*, which in the first place shows itself as a necessity for communication and sociableness, but afterwards appears in the ethical relationships founded on family, consanguinity, friendship, and neighbourhood, until it finally leads on to universal brotherly love.

The polemic of the school of Herbart against our acceptance of a plurality of impulses, is indeed explicable, although unfounded. For if the soul be an absolutely simple Real, it of course cannot produce any original impulses. But whence then do they come afterwards into the soul? We have above (p. 105) refuted the 'punctual' doctrine concerning the soul. A second fundamental error of this school, which we have likewise (p. 212) dismissed, is the reduction of all activities of the soul to *ideas*. Finally, the special reasons against a plurality of impulses are untenable. For from the fact that a man who has fallen into the water stretches his arms upwards instead of using them for swimming, it does not follow that he is wanting in the impulse to self-preservation, but only in *instinct*. Or if it be said that a man who seeks for originality and solitude has no impulse to imitation or to sociability, we have already explained this elsewhere. In the one case he seeks originality from, *e.g.*, vanity, or on account of a strong productive imagination; in the other he seeks solitude from a desire for change.

111. How are the different endowments of different men to be explained? The *impulses* just described are, indeed, to be found in everyone, although in different degrees of *strength*. And this is the case not only in individuals, but also in the two sexes, and in different generations, peoples, and ages.

The reason of this is to be sought in the above-mentioned (Q. 59) *origin* of the soul.

In so far, then, as certain powers (of sensation, ideation, feeling, &c.) are *innate* in a man, talents are ascribed to him; if these are of a particularly *active* nature, so that they make the man clever in apprehending anything, they are called *capacities*, which, when duly developed, are cultivated so that they become *knowledge* or *dexterity*.

Every man is an *individuality*, i.e. he is *unique*. All humanity forms one organism, in which each of us is only one member, but this member is indispensable to it. Each of us has his own peculiar part in the drama of the world, for in each one the past and the present mirrors itself in a new and hitherto non-existent manner. Each one, as Leibnitz well said, is a monad. As out of the twenty-six letters of the alphabet new original works in prose and poetry are constantly being formed, so each man presents a quite new thought in which an entirely original combination of human fundamental forces has a place. Even with respect to the *body* we never find two perfectly similar individuals, much less two persons *mentally* alike. If, in anyone, thought, feeling, and will are all weak and *equally* weak, such a man will do nothing remarkable, and will yet be satisfied notwithstanding his limitations; if anyone has a nature strong and equally *strong* in all these

respects, such a man will be a very useful and happy member of society. In all other cases, either thought, or feeling, or will is especially predominant, and then again the question comes in whether any two of these faculties are equal or not. We may take some examples in which the three fundamental forces are arranged in order of strength :

Desires, Feelings, Thought: low, sensual men;
 Feelings, Will, Thought: raging fanatics;
 Thought, Desires, Feelings: refined hypocrites;
 Thought, Feelings, Desires: rational characters.

We may take, on the other hand, examples in which the first member is the most strongly, and the two following equally, developed:—

Feeling; Thought, and Will: Artists;
 Will; Feeling, and Thought: Rulers;
 Thought; Will, and Feeling: Philosophers.

There are variations of all these (and of many other) differences, due to the influence of *temperaments* (Q. 106).

A man's *vocation*, which Schleiermacher calls the melody of one's life, is prescribed to him by his character. Thus he in whom the faculties of ideation and thought, especially constructive talents, the impulse to imitation, the feeling for space, form, weight, and number, as well as the comparative faculty, are strong, will choose some branch of practical mechanics. On the other hand, he in whom feeling predominates, particularly reverence, faith, idealism, and love, consecrates himself to a spiritual calling; the *teacher* requires head and heart, deep feeling and strong will, particularly a talent

for speaking, for order, and the love of children, &c. He only who chooses a vocation that suits him is capable and happy; he who fulfils his calling unwillingly only goes through it as a routine; he who is not able to fulfil it becomes a miserable charlatan. Moreover, it is not meant to be understood that there is but *one* vocation for every man. Many who have distinguished themselves in one department would have done so equally in another if they had been engaged in it. Thus, Leonardo da Vinci was a painter, a mathematician, and military engineer all at once; Michael Angelo, a painter, sculptor, architect, and poet; Schiller, poet and philosopher; Göthe, poet, statesman, and natural philosopher; and Leibnitz, theologian, philosopher, jurist, mathematician, physicist, and historian. It may indeed be said that these were *geniuses*; certainly they were, but we maintain that every man has many more talents than he thoroughly cultivates.

He who has a prominent capacity *without* creative originality, has *talent*, but he who by his exertions discloses to the human race new and undreamt of paths has *genius*. (Talent, in Greek, means properly balance, then a gift; genius, from the Latin, signifies spirit.) ‘Genius,’ as Schiller strikingly says, ‘does not proceed according to well-known principles, but in accordance with insight and feeling; but its insight is the inspiration of a God, its feelings are laws for all times and races’ (*Ueber naive und sentimentale Dichtung*, i.) Moreover, genius requires *schooling* as much as talent, and the greatest geniuses (Raphael, M. Angelo, Rubens, Schiller, Göthe) were distinguished for their diligence (cf. F. A. Wolf, ‘Genius is industry’).

§ 17. CONATION.

112. How is Conation distinguished from Impulse? Conation is developed from impulse by the help of experience. In the child only an obscure impulse bears sway, namely, the vague effort to be rid of some painful feeling or other; it as yet desires nothing, because as yet it knows nothing (*ignoti nulla cupido*). It wants meat and drink only in a general way, but knows not whether and how it can satisfy its impulse for nourishment. Therefore it sucks and bites every object that comes in its way, until it finds something eatable. But so soon as the *endeavour* (the impulse) has been once satisfied, the child *desires*, i.e. it longs for a *determinate* nourishment as the best satisfaction of its needs. How much more is this the case with the *grown person*; almost simultaneously with his endeavour (impulse) there rises an idea of that which would satisfy him. This *conscious* endeavour towards an *end* is called *conation*. Consequently it is distinguished from impulse (1) by the clearness of the idea connected with it; (2) conation is always either *positive* (desire) or *negative* (aversion), whereas impulse can go in both directions (it is *vox media*). Therefore (3) impulse is the root of conation, the latter is the perfected impulse. (4) Impulse is something lasting, conation is transitory. While the latter comes to an end when satisfied, the former remains; for (a) it is founded in our nature (Q. 109), and (b) the perfect satisfaction of the desire is ideal. One may even often observe that desire first really grows when it is satisfied. From this point of view, therefore, animals and children are happier than

civilised man. (5) Desire when it has once come into being resembles the *sea*; it has ebb and flow, but no absolute rest. From scarcely perceptible pain, desire may develop ever more and more from moment to moment until it reaches a height bordering on insanity, in which all perspective is distorted for the person who desires; he is ready to give his life, nothing seems to him too dear, if for it he may only obtain what he longs for. Satisfaction causes a break, but soon desire rises again and increases until it is again satisfied. As Sir W. Scott strikingly says: 'This is the course and the end of human wishes. They are produced by trifles, inflamed by imagination, and nourished by the breath of hope, until they finally consume what they have kindled, and the man, with his hopes, passions, and wishes, sinks into one contemptible heap of ashes.' How just this observation is, is shown, *e.g.*, by the fact that our desires are for the most part excited by that which attracts our *attention* to it. The child desires what is shining, coloured, moveable, and noisy. And as to grown men, what attracts their desires more than gold, splendour, activity, and honour? (6) It is remarkable that we most earnestly desire that which is difficult of attainment, partly because the desire grows by being resisted, partly because every energetic endeavour is a spontaneous activity accompanied by a kind of pleasure. Thence comes the sweetness of forbidden fruit (cf. Ovid—*Nititur in vetitum*).

Moreover desires are not only *different* in different people, but also in the same individual according to time, place, and the course of thought. On this is founded the possibility of education. On the other hand it must not be overlooked that desire has a very good

influence upon the bodily and spiritual development of man. For it sharpens his senses, brings into action all his bodily forces, gives wings to the imagination, and strengthens the will.

113. How may desires be classified? The classification of desires is difficult, because frequently a desire is excited by ideas, but is afterwards by the ascendancy of lower impulses brought into the sphere of sense, whilst on the other hand sensations of sense at times lead to higher feelings and purer ideas. Still the classification into desires *of sense* and *of mind* according to the object to which they are directed, is reasonable.

Every desire has content, strength, and rhythm. Its *content* is the idea of that which is desired; for the object in desire is always only an idea. For though the hungry man obviously desires bread, the vain man some distinction, &c., still that psychic state which the soul desires is not the external thing, but the sensation excited by the idea of this. Therefore the desires change with place and time, perception and culture (cf. Shakspeare, *Richard III.*, i. 2). The *strength* depends on the desired idea, the impulse, and the opposition encountered. Both the latter generally strengthen it. 'Distance is related to our passions as the stormy wind to the spark; the smaller ones it extinguishes, the more important it fans into a flame.' (La Rochefoucauld.) Of *rhythm* we have already (p. 269) spoken. It does not do to speak of the *duration* of desires, for their character is to be in motion.

114. How is inclination developed from desire? Since every satisfaction of a desire affords *pleasure*, a man returns to it the more gladly, the more an impulse to it from previous experiences exists in him. An often

recurring desire becomes *custom*, and thus produces *inclination*, i.e. a disposition to a particular desire. *Aversion* on the contrary denotes a disposition to dislike produced by natural disposition (Q. 111) and custom. If an inclination be so strong, that like an impulse it works irresistibly, it is called *propensity*.

Whereas *inclination* is changeable and capable of extirpation (we have different inclinations at different ages), a propensity is seldom wholly extirpated. Since it however, as well as inclination, arises from *custom*, we need not abandon the hope of the habit *being lost* again. Indeed, as Aristotle has said (*Eth.*, VII. 11), habit is second nature, because the *facility* which has arisen from repetition becomes like an innate disposition; nevertheless both inclination and propensity can be extirpated by habituating oneself to something better. A short consideration shows how wide the *sphere* of habit is. Conformably to habit we rise, become tired, hungry, &c., at certain hours. By habit we learn to run, to write, to do gymnastics, to ride; conformably to habit we use certain formulas of greeting, conversation, correspondence; with most men their daily occupation depends upon habit, and so do even their morality and religion. In habit consequently the *teacher* has his best ally or his worst enemy. Göthe says strikingly, 'To conquer inclination is difficult, but if it be accompanied by a gradually rooted habit, it is unconquerable.' But Schiller remarks on the contrary, 'What does not man forget! He can learn to do without the highest as well as the lowest things.'

115. How does desire become passion? When a desire is developed to an anomalous height, so that it not only deprives us of peace of mind but also of clear-

ness of intellect, and completely subjects our will, then *passion* arises. The very name rightly indicates that we are in passion in a state of *bondage*, for the distinctive nature of man depends on *reason* (p. 144). That the spiritual health of the passionate is impaired is easily seen by the impartial observer. Blind and deaf to all adverse ideas, because one single thought (fixed idea) exclusively dominates him, he acts unreasonably; for neither is the goal to which he so earnestly aspires worth being made the central point of his whole thought and endeavour, nor does the *way* by which he would reach it merit our approval. The centre of gravity of his whole being is displaced, he loses the objective standard by which to measure the interests of mankind, for he has sense for nothing that is not connected with his passion. In vain love implores him, morality warns him, art and science entice him—the miser only wishes to scrape gold together, the voluptuary only the satisfaction of his senses, the ambitious man only marks of respect, &c.

However boundless and unbridled passion may be, it does not by any means necessarily benumb the understanding; on the contrary it may *sharpen* it in order to make use of it. Every passion *concentrates* the attention upon its own circle of ideas, as, *e.g.*, is shown in the case of a revengeful man or a gambler. Further it *grows* of itself, like a fire, with which in general it has much similarity. Thus hatred increases by hating; for every thought of the hated person depreciates him, misrepresents all his words and suspects his actions. By degrees passion draws our whole thought, feeling, and will into its service. The revengeful man is at last wholly consumed by a burning desire for vengeance; his

passion is even directed against everything that is connected with the person who is the object of his revenge, against wife and child, relation and friend, all his possessions whether animate or inanimate (cf. Macbeth's vengeance against Malcolm).

But passion must not be confounded with *emotion* (Q. 107), although they are so far *related* to one another that they both interfere with free self-determination. Kant (*Anthropologie*, § 72) was the first to call attention to their difference. This consists in the following particulars: (1) emotions proceed from feelings, passions from desires. (2) The former is a momentary, the latter a lasting madness; hence the former are more upon the surface, while the latter reach the depths of our nature. Emotion is an intoxication, passion a disease. (3) Emotion blinds and dazzles even when it enlightens; passion on the contrary sharpens the senses, although in a one-sided manner. For while emotion does not reflect, passion ponders, often with coolness and circumspection, upon all favourable circumstances. (4) The former is acute, the latter chronic; the former disappears as quickly as it arose, the latter comes to a head more slowly and lasts a longer time. (5) Emotion affects the body more strongly, passion undermines the soul's health (especially morality). (6) Strength of character may protect one from emotions, but passion can itself become a trait of character. (7) Reason may as moral enthusiasm break out into emotion, but can never become passion.

In general, therefore, the saying, 'The more emotion, the less passion,' holds good. Still at times they go hand in hand. Repeated emotion settles into a passion,

according to their object, their origin, and their particular relationships.

§ 18. VOLITION. ✕

119. What is the meaning of volition? Whilst impulse is a *blind* endeavour, and desire one that is conscious of its aim, in volition there is associated a judgment as to the *attainableness* of what is wanted. And it is *attainable* when it forms the final point of a *causal series*, whose beginning is set in motion by ourselves and is the cause of all the succeeding members of the series. Then what is wanted appears as the *end*, and all the members between as *means*. But since the latter are only desired for the sake of the former, the desired object may be also called the *final cause*.

✕ Thus volition is distinguished from conation—(1) by its steadiness. The desires rush towards their aim, but without steadfastness; the will has to endure and persist until the series of intervening members, which is often pretty long, is unfolded; *e.g.* when any one wishes to be a scholar or a general, or when he wishes to have a house built, &c. (2) By its *discernment of the means*, which arises from reproduction (memory and imagination). Memory suggests to a man the means and ways which he formerly discovered by experience to be practical; imagination makes him move about in all directions in order to reach his end. From this is developed *deliberation* which is so necessary to volition. (3) By the *confident belief* in the result, whether it really happens or not. He who *wills* believes also that he *can*. The more abundant results we have had, and the clearer is our discernment of the attain-

ability of what we desire, the more energetic is our will.

If any of the above-mentioned factors be wanting, no effort of will is made. For without an *idea* of that which is desired, we should not know where to direct our endeavours; without the *discernment* of the causal series of means, we should either not arrive at our aim, or it would appear to us as a gift of chance; without the *experience* that we can attain it, *i.e.* that we are able ourselves to take part in that causal series, we should remain inactive; we should make no attempt to approach our aim, however ardently we desired it; for a thing is *willed* only so long as it is held to be capable of accomplishment. Thence it happens that we often *wish* for something without willing it, because we see no possibility of attaining it. Finally, to volition belongs a motive (pleasure or pain), an interest which brings the idea of what is desired from the sphere of thought into that of feeling.

Therefore there exists for volition neither 'if' nor 'but'; '*I will* is equivalent to *I shall*' (Drobisch, *Psychologie*, § 99). Volition arises from the 'knowledge that we *are able*,' *i.e.* from *acts*. Acts are produced by will and desire (Herbart, *Allgem. Pädag.*, p. 128). One can do what one wills, if one wills what one can do.

But if it be said that a man often desires something but does not will it, although it is not unattainable, then it either appears to him too difficult or he prefers his ease. Thus he did not really *will*, but drew back, in fear, from doing so. Again, a thing is often *willed* that is not desired, just because the difficulty of acquirement is deterrent. In both cases the law holds good

that in every case our volition is exactly as strong as the amount of preponderance of our desires over our aversions.

For the rest human volition has no *history*. The *beast* does not will, nor does the *infant*. A *child* makes a beginning in it as soon as he has observed that upon certain motions of his limbs certain changes in the external world follow. The child, though naturally without any suspicion of the psychological processes, has the elements of volition: desire, idea of the satisfaction, and experience of the way which leads to the latter. But whilst the volition of the child is little more than instinctive motion, although it *is* somewhat more because two ideas (that of pleasure and that of the motion of the limbs) are combined, these two ideas are in the *mature person* developed into a complete web; instead of the simple desire for a sensation of pleasure, there come in all the interests (sensual, moral, æsthetic, and theoretical) which have been formed in him in the course of his life, and which promote or hinder one another; instead of the simple motion of the limbs, he thinks of all the means and ways which have to be balanced, chosen, and willed before he can dwell on the attainment of what is willed. This explains the limitation of the child's will to what is sensible, and its poverty of means. Further the child has at first to make demands upon the will in every action, whereas in the mature person will works *automatically*; thus in fixing the eyes upon anything, in grasping, running, speaking, reading, writing, &c., how many efforts of will are expended painfully and in vain in learning these actions. The mature person, on the contrary, sets free by one act of will a whole series of movements (p. 200). This is the

foundation of all *routine*. The more familiar are our sensations, movements, ideas, and judgments, the quicker and more accurate is our *practical grasp* of their respective relationships; theoretical reflections in these cases not only waste time, but are also often disturbing and misleading; instance the case of Blondin the rope-dancer, of a great pianoforte player, or of a preacher. Thus, as it were, the soul manipulates the keys of the nerves, which at last perform their functions so automatically that at times they occasion movements against our will. Often one cannot restrain a word, a trick, or look, even though they are recognised as unsuitable. The power of the will is also limited in the spiritual sphere; it only sets going a train of thought, without further influencing it, and it cannot always do even this, as every one has experienced who has been unable to get rid of a particular thought.

Energy of volition to be enduring can be developed only by the education of life. Numerous acts of will must be carried out, temptations and dangers be surmounted, the body and feelings be hardened, before the will is strong enough to be consistent.

120. How does volition act? In the notion of volition it is implied that it works; inactive volition is merely desire. And in fact it acts in *two* directions; *externally* it interferes in events by *actions*, *internally* it guides the course of thought by volitional *impulses*. *Action* is the movement of the limbs in order to bring about some change outside ourselves, *deed* is the sum of the changes brought about by action, and which were intended by us. Action is consequently the intermediate member between will and deed, as muscular sensation is that between sensation and motion. If

the deed is foiled, then the accomplishment of the will was impossible, either *subjectively* (by reason of psychical hindrances) or *objectively* (on external grounds); in the latter case it is at least *attempted*. Every external hindrance only *strengthens* volition, if it really existed. Instead of a hindrance, there is often some deficiency in our accustomed environment, from which a feeling of pain arises which we call *missing*; this amounts to *longing*, when the object missed has great value for us (Göthe's poem, *Sehnsucht*). *Negative volition* is only distinguished from positive volition in that *aversion* takes the place of desire; but here we must observe that while desire may be directed to the *impossible*, aversion is only directed to the *possible*. Thus *aversion* arises only when what is unpleasant is certainly expected, whilst desire has no reference to expectation.

Internally volition asserts itself by voluntary *attention* and by *directing* the train of thought. We have already (p. 206) treated of the former. Desire steers blindly towards enjoyment, volition sharpens the attention and directs it to the point which initiates the causal series necessary for the attainment of the aim. Thus the speaker or orator endeavours to recollect the sentence at which he came to a standstill before, the cultured person tries to think of any word which he knows will not occur to him of itself. According as the idea in question belongs to memory (Q. 90) or to imagination (Q. 92) this process is called *recollection* or *improvising*. Thus attention first brings in real *perception* (of course only mediately), and how far *reproduction* depends on the will is shown by the affections (laughter, weeping, perspiration, &c.), and moods

(cheerfulness, gravity, sadness, devotion), which may be induced by thought.

Arbitrary will is particularly important for *reflection*, i.e. the return of thought to an earlier idea. It only occurs when the object is held fast, is isolated from its surroundings and is elevated into a concept by abstraction (Q. 98). However much this process may be made easier to us by language, only a few, who are disposed to it and educated in it, attain to it, and it always induces some fatigue on account of the effort of will necessary. Moreover it does not follow from this that thoughts (cf. sciences) are a result of arbitrary human will; this only gives them the initiative, they then develop according to their own (logical) laws.

§ 19. THE FREEDOM OF THE WILL.

121. What is the general meaning of freedom? Freedom is in the first place the opposite of *compulsion*. He is (physically) free, who is not hindered by others in the use of his capacities. In this lies a certain *power or right*. Thus political freedom consists in this, that every citizen can do or leave alone whatever he likes, so long as in so doing he does not infringe any positive laws. Freedom of thought is the unhindered expression of our thoughts by word and writing.

From this physical freedom *moral* freedom is distinguished, which indeed does what it wills, but it always only wills what it should do. Here we have only to do with *psychological* freedom. To what harmful consequences the confusion of the two leads, is shown in particular by the example of Kant, who conceived freedom as 'pure spontaneous activity,' having unconditioned

causality, and then found himself compelled to distinguish between the soul as empirical and as transcendental.

122. In what does psychological freedom consist? Conformably to the general notion of freedom, psychological freedom consists in the power of the Ego to *determine itself*. And indeed what is here in question is the empirical Ego (Q. 100), the result of our life's history, not the momentary changing presentation of the Ego. Therefore psychological freedom by no means implies that an individual act of will is independent of any cause (indeterminate), but only that the determining causes lie *within* the Ego.

The acceptance of *indeterminism*, as if we could with equal facility decide for one or another possibility, is as untenable as *determinism* which denies to men any self-determination. Both contradict the law of *determination by motives*, according to which every act of will is the consequence of one or of several motives.

The *objections* which are usually alleged against the freedom of the will are either of a naturalistic or of an idealistic nature.

I. *Naturalistic Objections.*

(1) From the standpoint of *materialism* (Büchner, Moleschott) it is asserted that a man is only the sum of his climate, soil, food, parents, and nurse. Nevertheless, our Ego forms the living centre of all these factors. Besides, the denial of free will does not by any means follow from materialism. For this can recognise the force of self-determination as well as that of thought, only that it derives the former from the motion of substantial molecules. We have shown above (pp. 117, 118) how untenable is this whole view.

(2) Freedom, it is said, contradicts *statistics* (Quetelet,

Buckle). For this demonstrates the unchangeable conformity to law of all human actions. Every year in the same country the same number of crimes and suicides are committed, the same number of marriages solemnised, &c. But statistics can only consider the *fact*, not the motives, which yet are the most important. And if in years of scarcity fewer marriages are contracted, this fact is founded on the reasonable self-determination of the marriageable people. And if even the *number* of suicides be quite determined, still the individual persons who will in the future kill themselves are by no means determined.

II. *Idealistic Objections.*

(1) Freedom contradicts the *causal connection* of the Cosmos (Büchner). But in the first place free self-determination must be also influenced by *reasons*. Therefore the law of causality is only an *abstraction* of man's; it is indeed one of the categories, but must be transformed if freedom can no longer find a place under it. And finally the law of causality only demands that everything should have a cause, but the cause for our actions is precisely self-determination.

(2) Again, that the door is thereby left open to *chance* (Kant, Fichte) is also an error, which has arisen from the confusion of the two significations of this notion. For chance in an objective sense does not exist; objectively considered, chance is at any rate not the opposite of necessity. We do acknowledge it in a subjective sense, for chance is the happening of a thing unawares or the unexpected consequence of our actions. That, *e.g.*, Peter III. was murdered in 1762, had an objective causal basis and was thus necessary; but that his death coincided with Frederick II.'s greatest need

was a chance in the view of human shortsightedness. Since then there is no (objective) chance, it cannot be promoted by human freedom.

(3) The law of *determination by motives*, says Schopenhauer, excludes freedom. For every decision, however free it may appear, is the necessary result of a struggle in which the stronger motive determines the man. But besides that here freedom is confused with indeterminism (*liberum arbitrium*), all motives have their root in the Ego. This has such power over them, that it can even at any point give the lie to its whole previous development. Indeed if we accept *transcendental* freedom, which is assumed to be able to lay down the absolutely *first* member in a series of causes, not only would all philosophy of history cease, but also the moral order of the world. All influence upon people, especially education, must be considered folly; and mutual confidence in intercourse, the formation of voluntary relationships (friendship, love,) impossible, for he who to-day overwhelms me with kindnesses might on these principles be my enemy to-morrow, and that without any reason. And all development of character would be inconceivable.

(4) As to the *religious* arguments, that freedom is inconsistent with Divine omnipotence and omniscience, we shall not consider them further in this place.

123. How does psychological freedom develop itself? Originally man is unquestionably *not free*, i.e. as a child he blindly follows his impulses, inclinations, and desires, whether he is moved by an undivided volition which draws him in this direction unconditionally, or whether among several motives the strongest incitement wins him over. In either case it is not the Ego which

determines itself. It is upon this self-determination alone that freedom depends as we have seen (Q. 122), *freedom* not meaning that a man voluntarily remains *inactive* in spite of actual volition or that in spite of a stronger volition he arbitrarily follows a weaker. Freedom consequently is not *lawlessness* but obedience to law, to that which has been *willed* by the ego.

The reasonable man has this advantage over a beast and a child, that he has the capacity to *choose* and to *resolve*.

With increasing age *interests* are multiplied, which, as has often been mentioned above (Qs. 102, 110, 114) are divided into sensuous, intellectual, æsthetic, and moral. These often come into *conflict* with one another, as every one knows by experience. However difficult the task may be, we must somehow or other reconcile those different interests before we act, whether the sensuous or the spiritual turn the scale. In *passion* the affair is soon dismissed, for passions reduce all former interests and considerations to silence. Here all *reflection* which refers to the *end* in view is excluded, passion only considers whether this or that *means* is most serviceable to it (p. 302); it does not subject itself to reflection as desire does, but makes the activity of thought useful to itself. The necessary pre-requisite of reflection is a store of *ideus*, not merely of the applicable *means*, but also of the necessary consequences; it thus requires a certain *degree of culture*. Memory and imagination, judgment and the experience of life, force the adult on every occasion for action to the *difficulty of choice*, *i.e.* to the *alternative* of *doing* or *not doing*. But for the most part situations are not so simple; rather to the one desire several others are opposed, each of which

propounds to us the same double question, each of which is attainable in manifold ways and is accompanied by various consequences. Then it is necessary to *reflect* what is the best course to pursue. Because this is so difficult some people fluctuate this way and that, becoming the more puzzled and uncertain the more they ponder, until at last some external compulsion or an accident (lot, &c.) turns the scale. Such weaklings are for the most part in the unhappy condition of finally willing what they really do *not* will (cf. Hamlet, Weislingen).

As long as such consideration hesitates as to which of the different possibilities of action is to be preferred, no decisive volition takes effect. But when one interest, by *external* or *internal* influence obtains such a preponderance over the others that all these disappear from consciousness, some *resolve* puts an end to that unsatisfactory condition of doubt. Yet this returns after the deed is done, often even while it is being done (as *repentance*), when from shortsightedness or weakness one has taken one's determination too soon. And this is generally the case, for we always allow ourselves to be guided more by *feelings* than by reflections, especially in the choice of *means* which are at the same time desired as subordinate aims, and consequently must be seriously weighed in order to find if they are serviceable. This weighing is described as *prudent* when it only takes into account serviceability to purpose, *reasonable* (moral) when it has regard to moral value.

With every step by which a serviceable means brings us nearer to our end, not only does the pleasure of *success* increase because the extreme tension of our mind is lessened, but also the energy of the *will* in-

creases. On the other hand pain and uncertainty increase when even the first attempt at accomplishment fails. Both often increase to such an extent that an action that had been begun remains uncompleted.

These hindrances are of the greatest importance for the formation of the will, or of strength of character. For according as we are accustomed or unaccustomed to failure, and according as our temperament inclines to the choleric and sanguine, or to the phlegmatic and melancholy, it will bring with it either a *strengthening* or a *relaxation* of the will. The obstinate and the inconstant are as easily daunted in face of real hindrances as is the weakling; *strength of character* alone has enough patience and consistency to conquer a succession of hindrances. The obstinate believe that blind consistency is a mark of strong character, even when it offends against reason; whereas a well-disciplined will shows itself rather in its strength being at every point proportioned to difficulties and to the value of what is desired.

Now since we have seen that arbitrary will (*liberum arbitrium*) cannot assert itself against the influences of temperament, disposition, inclination, and above all against the mechanism of ideas and interests, then the freedom of the will consists in nothing but the dominion of reason over sense. This *self-government* of a man arises from a settled habit of circumspection due to reflecting before choosing. From individual acts of will, reflection rises to ever wider points of view; more wishes are ever being limited or suppressed in the interest of reason, more individual aims are ever subordinated to the last and highest aim, that of being happy by means of good conduct. To speak of *arbitrary*

will in the sense of causeless action is altogether absurd (p. 317). *Determination of the will* is not subject to arbitrary choice, but *action* is arbitrary, *i.e.* it follows the *will*. But *freedom* consists in this, that as far as possible all our deeds follow the will, not led astray by external compulsion or the power of sensuous impulses. This freedom must be won by *insight* and *will*. For ideation, feeling, and desire are not in our power. Since then, freedom is the opposite of compulsion or bondage (Q. 121), our *insight* will be free when it beholds the world of external and internal phenomena as a clear and connected fabric of distinct concepts. This is brought about by philosophy, but only when it is led by an energetic *determination* to seek truth, and when found to acknowledge it. And the *will* is free when it spontaneously arranges the world of external and internal phenomena in logical and ethical order. To attain this freedom is the business of *life* when life is enlightened by speculative and ethical study. *Reason* and *practice* require and promote one another. Will without insight is blind and non-moral; insight without will is weakly and worthless. It is only both united that give us firm principles (maxims) and moral action. So that Göthe well says 'the history of a man is his character,' *i.e.* the result of his speculative insight and practical performance.

Thus freedom is neither absolute *indeterminism*, *i.e.* independence of laws and causes, nor absolute *determinism*, *i.e.* dependence on external compulsion.

124. Where do we find freedom fully developed? In what we call *character*. For character (literally *stamp, impression*) consists in decided and consistent action in accordance with principles. Although a man

of character can never act otherwise than in conformity to his inmost nature, his conduct following *necessarily* from his principles and maxims, he is unquestionably freer than others, whether he act well or ill. He, on the contrary, is *deficient in character*, who (like a *child*) follows every allurements and fancy without plan and without steadfastness, or who (like many grown persons, e.g. Clavigo and Hamlet) from indecision and want of clear views, does not attain any settled course of action nor consequently any rest of mind. Such persons, whose character is *want of character*, because they fluctuate between virtue and vice, are the most contemptible, dangerous, and unhappy of men.

In the narrower and strict sense, it is only the moral man who has a *character*. For his principles are, because agreeing with reason, the only ones that are *incontrovertible* and thence *to be depended upon* in every condition of life. He only escapes distraction of mind, fluctuations of desires, and indecision in action. In him alone are insight and will combined in true freedom. The man of immoral character on the contrary, however imposing in its æsthetic effect his energy may be, as in Napoleon I., Alexander, &c., soon comes into conflict with himself (his conscience), with society, and with the demands of absolute reason. He thus falls either into repentance (Karl Moor), or childish pride (Macbeth), or madness (Lear).

The moral character to which there must be tendencies even from birth, and which must be developed by education, example, intercourse, reading, course of life and the like, is the highest *work of art* which man can create ; for he himself is (in as far as he is a creature of sense) the material, and (in as far as he is mental)

the artist who moulds that material, and the ideal according to which it is moulded.

From the constant flux in which psychical processes are, the consolidation of character appears to be essentially impossible. But as we have shown above (Q. 59) a man's special nature and capacities are determined even before his birth. Thus Göthe is right when he says, 'According to the law after which thou hast begun thou must be ; thou canst not escape it !' The fundamental scheme, the fulfilment of which is our life's task, is early apparent in the child's innate *traits of character*, which determine his thought, feeling, and will. Insight into what is truly of value, the principal consequences of passion, and practice in reasonable action, lead a man ever more to self-observation and self-government. Thus character has a *speculative* and a *practical* side. The merchant regards everything from a practical point of view, with reference to his pursuit of gain ; the man of the world cares only for the superficial, æsthetic aspect of things and the social pleasantness which they promise him, the ecclesiastic estimates everything from the point of view of eternal felicity. Thus in the first place a man's predominant range of ideas is formed by his *calling*. Therefore it is not a mere matter of *custom* that one's first inquiries about any one refer to his position, for this determines his circle of ideas.

The more firmly these *ideas* are combined together, the nearer is any one's prospect of attaining to consistent *action*. Here we should consider that the different spheres on the one hand are distinct, and on the other hand are connected like the parts of an organism, and that now one is prominent and now another, yet without wholly suppressing all else. Otherwise *perverse*

inconsistencies arise, as when any one is extremely religious in disposition, but in action immoral, or when any one who has clear and correct speculative convictions, in practice proceeds according to maxims incompatible with his convictions. Thence come those numerous *contradictions* in characters which we may frequently observe in ourselves and others.

The theoretical *ideal* is consequently *general culture*, so that prejudices, errors, obscure concepts, may not gradually become unchangeable principles, which would then exclude any reform or improvement in our philosophic view. In reference to practice the ideal is *moral freedom*, which enables us to do what is *reasonable* with *energy* and *joy*. Thus *reasonableness*, *freedom*, *morality*, and *character* are only different aspects of the same concept.

Remark.—As correlative to freedom or character we have the attribution of this to the Ego, that is, we judge an action to be, or not to be, attributable to the Ego, according as it has or has not been willed by the Ego. It thus refers the *deed* to the *will*, and this again to the *individual*. The attribution is not complete either when what is willed is not done, or when what is done was not willed. But it may still exist, though in the one case perhaps there was a failure to do something commanded, in the other case a perpetration of something forbidden. The deed only ceases to be *attributable* when the normal *interaction* between our ideas and changes in the external world is *disturbed*, e.g., in dreams, illness, and madness. But where a man can judge of the consequences of his actions, either the whole *guilt*, or *carelessness*, must be attributed to him. The only true *standard* in all cases is *volition*. There-

fore each one is answerable so far as *his* volition (*i.e.* what has proceeded from his Ego) extends, *i.e.* so far as freedom extends. Consequently there are different *degrees* of attribution, according as the Ego is not yet unfolded (as in the child), or is defectively unfolded (as in uncultivated persons), or according to the intensity of the will. It is only in mental disease (when as it were the health of the Ego has been disturbed and its nature *changed*), that we *cannot impute* a man's actions to him as his own. The *moral* judgment distinguishes *degrees* of responsibility according to the measure of freedom; it distinguishes impulsive deeds (manslaughter) from deliberate ones (murder), moral mistake from rooted wickedness; it examines narrowly the connection in which any particular deed stands to the character. As Schiller says, 'I only call a man to account for that deed to which his character naturally impels him.'

§ 20. MENTAL DISEASES.

125. What are mental diseases? Mental diseases or spiritual disturbances are *abnormal* states of the soul's life, to which anomalous physiological conditions correspond, and in which either some faculty of the soul (ideation, feeling, will) performs its functions badly, or the harmony between the faculties is disturbed.

Mental diseases belong almost more to pathology than to psychology. For they depend upon diseases of the nerves, though they may be occasioned by emotions (fright, anxiety, grief), and passions (haughtiness, ambition, disappointed love), as well as in general by every excessive depression or excitement of mind. But

they are also occasioned by purely corporeal states, as diseases of the blood or of the abdomen, atrophy, &c.

126. What is the boundary between normal and abnormal mental life? This boundary is extremely difficult to draw, partly because humanity and interest prevent us from designating many psychical disturbances as mental disease, partly because the nature of the latter is still only partially known. It is difficult even for the most able physician of mental diseases to diagnose the beginning of mental malady; for the 'patient' may still be sane and the 'sane person' sick. Usually, therefore, mental disease is first recognised as such when it has already gone too far to be cured.

As *primary* disturbances we find *peculiarities* of thought, feeling, and volition, as well as disturbances of the sensory and motor nerves. Sensation is intermittent, thought becomes illogical, too fast or too slow; the emotional nature excitable or dull, volition too weak or too violent; memory disappears, imagination develops delusive ideas which end with the disturbance or abolition of self-consciousness.

We find the following *types* of conditions which border on mental disease:—

(1) *Narrowing of the circle of ideas.* The ardent thinker hears and sees nothing around him, the productive artist (and poet) shuts himself up from the external world; the hypochondriac, neglecting every call upon him, indulges in his whims. Indeed, in most persons, the narrowing of their horizon is *habitual*, whether this arise from passion, which becomes almost a *fixed idea* (ambition, love, jealousy), or from narrow education, monotonous occupation, and the like. With this is connected:—

(2) *Retardation of the course of ideas.* From limited endowment and defective development arises *weakness of mind* (*tardum ingenium*), which can no more follow the flight of thought than that of events. Externally quite reasonable, especially in all that concerns matters of propriety and custom, the weak-minded man hides his interior hollowness by empty phrases and fine manners, whose worthlessness becomes clear to us as soon as he is engaged in any serious discourse.

(3) *Great absence of mind.* There are people who in consequence of irregular education and manner of life, are not in a condition to collect the ideas and feelings which arise in their minds in quick succession. Press of occupation, a passion for reading, extreme addiction to anecdotes, and social distractions promote this dissipation of the mental forces.

(4) *Impetuosity of volition and feelings.* In many persons of energetic impulses there is formed a tendency to emotions and passions, which finally becomes established as too great excitability.

These dispositions only need to pass through a few further stages to become disease, of which there are four principal forms:—madness, imbecility, folly, insanity.

127. What is meant by illusions of sense? We have seen above (p. 169) that the senses themselves do not delude, *i.e.* we *perceive* precisely that stimulus which any object calls forth in the sensory nerves, and our *idea* of it corresponds precisely to the sensation. The delusion, as Kant (*Anthropologie*, § 10) was the first to remark, lies rather, in our *judgment*, in that we either assert that a *sensation* is objective, or that a merely reproduced *idea* is sensation. It is true that

the eye which is satiated with red has a sensation of green, but it is false to say that a white triangle which *appears* green, *is* green. However often a deceased person may have appeared to us, it is an error to assert that he stood or sat where he appeared to us. The first-mentioned form of sense-deception is called *illusion*, the latter *hallucination*.

The former adds incompatible predicates to an actual *sensation*, the latter confounds *idea* with sensation. In the former case we are deceived by sensation, in the latter by reproduction. Consequently illusions always proceed from external things, we only mistake their connections and nature; hallucinations on the other hand arise from within, without any objective basis. The ultimate source of both errors is *imagination* (p. 229).

Moreover our whole *view of the world* may be ingeniously referred, as is done by Volkmann (*Psych.*, § 74) to these two errors. For since things are in themselves, in no case as we think them (being to us at first nothing but ideas), we may call them hallucinations, and their properties illusions.

Every healthy man has at times, in consequence of physiological stimuli, sense-deceptions, and if he speedily recognises them as such, they do not matter. But if they take a firm hold of his mind and permanently cloud his judgment, then disease begins. For the soul translates its sensations and ideas into its own idiom. Hence illusions and hallucinations assume *different forms* according to age, mood, and degree of culture. Thus a nervous man perceives in the first place merely a *pressure*, as if something lay upon him, but soon his imagination turns it into a skeleton.

Such erroneous ideas arise in particular in great numbers from physical stimuli in nervous fevers, in drunkenness, and at death. The phenomena which torment the *delirious* are well known (rats, snakes, mice inside them, minute bright objects); the *hysterical* feel a ball rising up within them, the Scotch are said sometimes to have 'second sight.' Violent mental emotions, darkness, solitude, bodily suffering, &c. promote sense-deceptions. So does *suddenness* of impressions; a sudden thought appears to us to be *called up* from without, an unusual determination to be *commanded* by some stranger; violent conations easily take form. The way is prepared for such conditions by fasting, exhaustion, spiritual tension. A hallucination that has once been entertained may return again and again, and take stronger and stronger hold of the mind. He who has once seen a spirit soon sees more. Habit, remembrance, pleasure, and vanity co-operate. Persons of very strong imagination can even call up *hallucinations* voluntarily (spiritualism), aided by gloomy brooding, rhythmical motion and mystic music.

Simple examples are, sounds in the ears, seeing sparks, after-images and phantasms in a sleeper; also the deceptions of the Fata Morgana. More difficult of explanation are the following. Pascal, in consequence of spiritual tension, saw ever near him a glowing infernal gulf; Olivarez, as Lesage tells us, died of horror at an apparition, which tormented him day and night, although he knew it was only a delusion. Cellini, Francis d'Assisi, and Joan of Arc were visited by the Madonna. Catherine of Siena, Theresa, Rosa of Lima, and many others believed themselves to be brides of Christ; many saints (Francis d'Assisi, Madeline of Puzzis, &c.) had the

print of Christ's wounds stamped upon them, St. Anthony, Luther, &c., saw the devil. And even Göthe saw himself, in 1771, riding to meet himself. Hobbes saw ghosts around him in the dark, the prosaically sober F. Nicolai saw his dead son, not to mention Hamlet, Macbeth, Richard III., &c. Some great poets, artists, and thinkers could amuse themselves with hallucinations at will, cf. Göthe, Tasso, Jean Paul, W. Scott, Cardanus, and Spinoza (*Ep.* 30).

If the hallucination continues, a *fixed idea* is developed therefrom.

Moreover people are at different times more or less exposed to these sense-deceptions, particularly at times of great convulsions in the state, in the church, and in science.

128. How far is dreaming a type of mental disease? In dreams (p. 238) illusion and hallucination are mixed up. They give us a very good idea of mental disease. For *self-consciousness* being obscured, the ideas to which we are given up become so *lively* that they are taken for sense-perceptions and sensations of external objects. Certain isolated ideas, which in a waking condition keep us straight, are left out of account; thus we walk upon water, fly through the air, speak with the dead, become children again, &c., without thinking of the law of gravity or the limits of time and space; and we even lose the unity of *self-consciousness*. Not only do we commit the grossest anachronisms and absurdities, but we even find ourselves broken up into different Egos; we are questioned, we answer, one answers better than another, &c. The *dramatic poet*, indeed, transports himself into the different characters of his piece, but he knows at the same time that he is not identical with

them; the *dreamer*, on the contrary, is subject to this delusion. In dreams we may have thoughts, feelings, desires, and passions, which we would repudiate when awake.

In dreams too, memory and the power of judgment, understanding, and self-consciousness are checked or altered. He who acts like a dreamer, when awake, is *mentally diseased*.

129. What is meant by somnambulism? We often dream in such a vivid manner that we move, speak, laugh and weep in sleep. An intensification of this condition takes place in *somnambulism*, to which young people and those who are just growing up are particularly exposed.

(1) *Sleep-walking*. Many nervous persons have such vivid dreams, that their organs are impelled to movements which waking persons alone would seem able to perform. The sleep-walker gets up, goes to his writing table, or to his customary occupations, many can even walk safely over roofs of houses. This phenomenon is simply explained by the connection of body and soul, and the vividness of the dream. The somnambulist is wholly surrounded by his dream-images; if his environment *correspond* to them, he treats it in a perfectly reasonable manner; if it does not correspond to them he excites the laughter of the spectator; for he strokes the pillow as if it were a child, makes swimming movements on the floor as if he were in the water, &c. It is not mere action, but its distinctness and precision which are wonderful in the matter.

(2) *Magnetic sleep* appears much more puzzling. This must be produced by the 'rapport' of a subject with a 'magnetiser' by means of certain manipulations;

the medium, although asleep, gives astonishing answers to questions proposed to him. This phenomenon has hitherto, on account of the dubious nature of the evidence, been too little inquired into. The summoning of sleep at will is indeed analogous to it, as is also the narrowing of consciousness (pp. 237, 325). The visions of magnetised persons also depend entirely on their range of ideas. And if a man's ideas are constantly occupied with his magnetiser, mere contact with the magnetiser may well produce striking effects during the mesmeric sleep.

Other stories told about somnambulists—reading with the finger-tips, seeing with the heart, &c.—belong to the dominion of *fable*. So does the assertion that second sight is effected by a *magnetic fluid*.

130. How may mental diseases be classified? The classification of mental diseases is difficult, because a great number of individuals go through all, or almost all, the diseases in succession.

It is best to start from the contrast which so often recurred in the discussion of feeling, namely, the contrast between *depression* (lowering of the tone) and *exaltation* (overstraining) of psychic life. The different forms of these two principal groups appear as stages of a process of disease which ends in the *destruction* of mental life. Physiological and anatomical changes in the organism go on parallel with this psychical course.

I. *Depression.*

(1) The patient feels excessive anguish, anxiety, and sadness. In the stage of *hypochondria*, the intelligence suffers hardly at all, only psychical monotony depresses the springs of will and thought, because the patient cares exclusively for certain things, usually his own

faithfulness meet, and love and faithfulness kiss each other, there where noble, good people dwell, it is good to be. And where human nature is, beneficence follows the powerful, the Creator's prerogative, eternally youthful existence, not missing heirs, of whom the more womanly in truth, power, and clearness, gracious maid, gracious women and the powerful Creator bless, &c.' Lunacy generally ends in *delirium*.

(2) *Insanity*.—Here we find choleric temperaments in which mental life is intensified to permanent emotional disturbance, which exhibits itself with wild urgency in bodily actions without aim or goal. The patient who often turns against persons dear to him is urged against his will and knowledge to give scope to his over-excitement. Often his understanding is so perfect that he warns those around him before the access of a fit, or even urges his own restraint (*mania sine delirio*). The oftener these attacks are repeated, the longer they last, until they are fatal.

(3) *Madness* shows itself in a complete change in the vital sensations and the destruction of self-consciousness. It constructs the idea of an imaginary body, and this idea exhibits itself in all kinds of hallucinations, as the disablement, shortening, lengthening, and doubling of particular parts of the body, change of age and sex, transformation of the body into glass, wood, butter, &c. To this imaginary body is soon joined the idea of an imaginary world, whereby imagination and memory, which are lessened in one direction, are increased in another. The *madman* may possess a right judgment in many things, but on the whole his thought is illogical and distorted. This condition generally ends in paralysis or imbecility.

Thus we may draw up the following list :—

Hypochondria	} Depression.
Hysteria	
Melancholy	
Monomania	
Exhaustion	
Lunacy	} Exaltation.
Madness	
Insanity	
Imbecility	

131. Whence do mental diseases arise? Their causes are very numerous. We find that, as in all the rest of our life and nature :—

(1) The *influences of nature* are important, such as climate, weather, and time of year. Most beginnings of disease take place in summer; the early morning is dangerous to the melancholy man, and moonlight to all who are predisposed to mental disease.

(2) In *towns* mental disturbances naturally arise sooner than in the country.

(3) From the beginning of the *age of puberty* their number increases :—in men the most dangerous age is from twenty to thirty years, in women from thirty to forty. In old persons we often see senile imbecility.

(4) The *state of health* has both disposing and determining effects. In particular injury to the head (also heat and cold), narcotic poisoning, typhus, bleeding, physical exhaustion (by hunger, thirst, debauchery, exertion, age), changes in the abdominal and sexual systems (by gluttony, sedentary life, pregnancy, puberty, &c.) ; heart and lung diseases.

(5) Then the *constitution* is important. Nervousness,

sanguine and melancholy temperaments, dispose particularly to it.

(6) *Heredity* plays a great part, still this should not be over-estimated. Maudsley says, that certainly one fourth of mental diseases are inherited, perhaps one half, possibly three fourths; Schläger, on the other hand, only assumes 4 per cent., and considers that heredity is of force only when before or at the time of conception one of the parents was mentally diseased. Many become so from the fear of having inherited the disease. It is only tendencies that are inherited.

(7) *Women* are more disposed to mental disease than men; but more of the latter are to be found in public institutions, because they are wilder and more dangerous. Single people are more subject to mental disease than the married; married women more than married men; widows more than widowers. In Bavaria there were in every 10,000 persons, of the unmarried 11·10 mentally affected, of the married 5·94, of the widowed 16·3, of the divorced 63·62.

(8) In *imprisonment* mental disease is apt to arise particularly in *solitary confinement*, which women and uneducated people are least able to bear. Solitude, remorse, longing for freedom, grief and anxiety for one's family, bad lodging, want of movement, of air and light, all co-operate.

(9) Different *modes of life* dispose in different ways to mental disease; the higher less than the lower; *military* life (especially of officers) more than *civil*.

(10) The Caucasian race shows the greatest susceptibility, people in a state of nature the least. According to Haushofer the mentally diseased in every 10,000 Europeans amount to :—

In Norway 34, Denmark 28, Iceland 26, Saxony 26, Hanover 17, North America 15, Ireland 15, France 13, Bavaria 11, Belgium 10, Sweden 10, England 9.

On an average, in civilised countries there is one patient in 772 inhabitants.

(11) *Crises* of all kinds (social, political, religious), in particular war, famine, sickness, exercise a bad influence that may last for years.

(12) But most important of all are the *peculiar psychical* factors, namely, fright, anxiety, fear, joy, uncertainty, vexation, anger, hatred, jealousy, disappointed love, ambition, pride, religious doubt and enthusiasm, home-sickness, sentimentality. Besides these there is our one-sided intellectual *education*, our rousing, restless, galling life, especially in towns, the *struggle for existence*, the over-stimulated *civilisation*, and the complete break up of all old political, religious, and social views. It is notorious that there are at present many more persons mentally affected than there were in the Middle Ages, or even fifty years ago; that what we call *civilisation* has brought with it, with all its good and evil, this sad result.

The only *remedy* for mental disease is the propagation of *true culture*, which not merely enlightens the understanding but also educates the heart and will which has regard to the body as well as to the soul! *Mens sana in corpore sano*—to this ideal, Psychology (no less than Ethics and Pedagogic science) calls on us to aspire. The more we realise it the *freer, better, and happier* we shall be.



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